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DOCUMENTS

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Wright Outlines CAA Action In Airport Building Program

The Federal Airport Act which has been passed by Congress represents "the nation's first planned effort to develop a civil airport system worthy of the name," Civil Aeronautics Administrator T. P. Wright told the United States Chamber of Commerce annual meeting on May 2.

CAA's Next Action—After signing of the bill, Mr. Wright told the gathering at Atlantic City, the next steps on airports are as follows:

"In Washington we will prepare the necessary forms and regulations for submission of applications. In the field our engineers will confer with local authorities to determine their needs in light of developments since 1944.

"I want to make plain that our planning will be decentralized as much as possible into the nine CAA regions, with headquarters at New York, Atlanta, Chicago, Kansas City, Fort Worth, Santa Monica, Seattle, Anchorage, Alaska, and Honolulu. In addition, we hope to have approximately one district office for every state. These district and regional offices are the focal point for airport action—delegations to Washington pressing for action on specific projects will serve only to slow down progress."

Continue Local Planning—At the same time, Mr. Wright urged, local groups should move full speed ahead with airport planning and promotion. "The more local planning that is done," he said, "the lighter will be the CAA task, and the faster actual construction can begin. At best, very little construction work can get under way before next spring. If you make sure that your community has all necessary legislative authority to participate in the program, if you get your site selection and design details well under way, and if you make all possible preparations for the necessary financing, then you can be assured that your project will move forward rapidly."

Provisions of Bill—Mr. Wright gave the following explanation of the airport bill's major provisions:

"The act authorizes appropriations to the CAA of \$500,000,000 as the federal share of airport construction over the next seven years, with a maximum appropriation of \$100,000,000 in any one year. In addition, it authorizes a sum of \$3,000,000 for preliminary planning and surveys. I should emphasize that the act *authorizes* these sums, but it will require separate legislation to *appropriate* them. In other words, we do not yet have money to plan or build, and may not get any before July 1.

"Expenditure of the \$500,000,000 is to be in accordance with a CAA national plan which we are directed to revise annually. Once an annual appropriation is made, \$3,500,000 is set aside for administrative expenses, and 75% of the remaining amount is reserved for apportionment among the states according to their population and area. Grants from the other 25% can be made at the discretion of the CAA to carry out the national plan. We will use this money to bring airport facilities up to standard in states where they are below par, and as our share of projects in the national parks and forests.

(See page 56)

CAA Surveys 20-Year Aviation Record

The great civil aviation industry we have today reflects years of toil by private enterprise, which for the last 20 years has been assisted by the federal government.

Just as it has fostered earlier forms of transportation because of their importance to the national economy, the government began its efforts on behalf of civil aviation in 1926. On May 20 of that year, President Coolidge signed the Air Commerce Act, which gave the Department of Commerce specific responsibility for aiding civil aviation.

Previously there had been scattered civil aviation activities by the Post Office Department and other agencies, but May 20, 1926, can be called the real starting point for the unified service which the Civil Aeronautics Administration offers today.

To mark this 20th anniversary, the JOURNAL carries on pages 59 to 62—material reviewing the progress of civil aviation during the two decades in which the CAA and its predecessor agencies have been active.

Air Traffic Best Measure of CAA Service—Burden

The number of planes in service, civil or military, is a completely misleading yardstick by which to measure the size or efficiency of the Federal Airways establishment or of Civil Aeronautics Administration operations as a whole, William A. M. Burden, Assistant Secretary of Commerce, told the Third New England Conference for Aviation in a recent speech in Boston.

Flight Volume Is Test—Only in the case of the CAA safety regulation service, and then only in half its work (involving 4% of CAA employees), does the CAA work volume depend on the number of civil aircraft certificated, he pointed out. Best indication of CAA's workload is the volume of flights on the Federal Airways system and its ability to service *all* flights. A single transport airplane which makes hundreds or thousands of flights a year puts more of a strain on the airways system than hundreds of private planes, which use the airways facilities for only a few flights a year.

Airways Big Job—By far its largest activity is the design, construction, operation and maintenance of the basic network of radio navigation and communication facilities, Mr. Burden pointed out. This system, now nearly 40,000 miles in extent, comprises 420 radio ranges, 2,151 beacon lights, and intermediate landing fields together with the extensive communication network required for the collection and dissemination of meteorological information and aircraft movement reports. The radio communications, navigation facilities and the 135,000 miles of landline network are staffed and operated 24 hours a day.

It's the job of operating and constructing these facilities that currently requires 8,235 or 79% of CAA's 10,478 employees, and over 80% of its 1946 budget.

Continuing Mr. Burden said, "Present airways personnel and equipment could handle a far larger volume of civil air traffic than exists today, just as the highway system of the early 1920's could handle many more cars than were on the roads at that time. And with every increase in traffic, the utilization of the airways system will improve and its cost to the nation per unit of traffic handled decrease, just as the unit overhead of a factory goes down as produc-

(See page 63)

New Local-Feeder Airlines to Serve Rocky Mountain and Florida Areas

Three new airlines have been selected to give local-feeder service on an experimental basis by Civil Aeronautics Board decisions in the Rocky Mountain and Florida cases, first of the consolidated local-feeder proceedings to be settled. Pending decisions in proceedings of this type will grant local-feeder service in about nine more regions in the country, bringing air service for the first time to a network of small cities in each area.

Rocky Mountain Carriers—In the Rocky Mountain States case, a proceeding which involved 18 applicants, Ray Wilson, Inc., and Summit Airways, two new operators, were given temporary feeder route certificates. The Board also granted Western Air Lines and Inland Air Lines additional points on their existing routes in the same area.

New Florida Line—Thomas E. Gordon, operating under the name "Orlando Airlines" was granted local-feeder service in Florida under a 3-year certificate. National's application for feeder routes was denied on the basis that this airline was more interested in long-haul operations which would preclude a fair test of the local or feeder service.

Extension of National's present route 39 from New Orleans and Pensacola to Miami via Tampa, and the addition of Panama City, Fla., and Valdosta, Ga., to route 39 between New Orleans and Jacksonville were granted as being more in keeping with this carrier's service pattern.

In outlining the guiding principles in the local-feeder line cases, the Board pointed out that short-haul local service with conventional aircraft will be largely an experimental operation. Practically no information gained from actual experience is now available.

Proof Is in the Using—The Board does not know now whether the public will accept local-feeder services to a large enough extent to make them profitable, or whether the various forms of surface transportation will offer more economically attractive means of traveling between small cities.

"Despite the boundless enthusiasm shown by the cities to be on the air map of the country," the Board said, "the tickets will be paid for by individuals, each acting on his own judgment as to whether he can reach his destination more conveniently by train, bus, automobile, or airline. Civic pride will not enter into that decision."

The Board, under its mandate "to foster and encourage the development of an air transportation system adapted to the national needs" believes it should authorize a reasonable amount of local service throughout the United States on an experimental basis. This will permit the development of actual traffic experience, which can be used as a guide in making future additions to the service.

Ray Wilson, Inc.—Ray Wilson's aviation experience in the Denver area dates back to 1929. Until 1941 his aeronautical enterprises included sales, service, pilot instruction and operation of charter flights. Since then, as a partner in the Wilson-Bonfils Flying School at Chickasha, Okla., he has devoted his activities to training cadets for the Army Air Forces.

Ray Wilson, Inc., will reorganize, using in large part the funds and equipment of the Wilson-Bonfils Flying School and will operate five routes—one between Salt Lake City, Utah, and Grand Junction, Colo., stopping at Provo and Price, Utah. The second continues from Grand Junction to Albuquerque, N. Mex., with the intermediate stops of Cortez, Colo., Farmington and Gallup, N. Mex.

The other three routes stemming out of Denver to Grand Junction and Cortez, serve western Colorado cities isolated because of their mountainous location. One Denver-Grand Junction route has stops at Boulder, Grandlake, Craig and Glenwood Springs-Rifle. The other route goes by way of Leadville, Salida, Gunnison and Montrose-Delta. Intermediate points

on the Denver-Cortez route are Colorado Springs, Pueblo, Canyon City, Alamosa-Monte Vista and Durango.

Summit Airways—Summit Airways, Inc., a Wyoming corporation which has specialized in pilot training, is now owned by Fred M. Manning, oil executive who has for more than 12 years owned and used airplanes in connection with oil drilling operations throughout the Rocky Mountain area.

Summit will operate three routes between Billings, Mont., Salt Lake City and Denver serving cities principally in central Wyoming and along the southern border where mountainous terrain results in circuitous journeys by surface vehicles. Intermediate points on the Billings-Denver route are Powell-Lovell-Cody, Greybull, Worland, Thermopolis, Riverton-Lander, Rawlins, Laramie, and Cheyenne, Wyo., and Ft. Collins and Greeley, Colo. Eight of these cities have a population of 2000-3000; one, Rawlins, has a population of 5500 and the remaining four range from 12,000 to 23,000. An extension of this route from Lander to Salt Lake City via Rock Springs, Kemmerer and Evanston gives central Wyoming cities local service to Salt Lake City. To complete the pattern is a connecting link between Rock Springs and Rawlins providing southern Wyoming with a route to Salt Lake City on the west and Cheyenne and Denver on the east.

Orlando Airlines—Orlando Airlines, operating a charter air service since 1944, is headed by Thomas E. Gordon, former pilot, and present operator of the Cannon Mills Airport at Orlando, which he plans to use for storage, servicing and repair of aircraft to be operated by his airline. In his fixed base operations he employs four licensed pilots, each with instrument ratings and each qualified to operate both single and twin-engine aircraft. One pilot has had previous experience in commercial airline operations. In addition, two mechanics and other ground and office personnel are employed by the applicant.

Orlando Airlines will operate local-feeder line service on routes north of Orlando to Jacksonville and Tallahassee, stopping at eight cities which do not have air service at present.

Routes include operations between Orlando and Jacksonville via De Land-Sanford, Palatka and St. Augustine; and between Orlando and Gainesville, via Ocala; beyond Gainesville to Jacksonville on one segment and beyond Gainesville to Tallahassee via Lake City and Live Oak on another segment.

The Board's decisions in these cases brings the number of domestic air carriers within the United States up to 22.

Wartime Airport Designation Rule Repealed by Board

Private pilots may now hangar their planes in a pasture—if they have one—without calling upon the Civil Aeronautics Administrator to declare it an airport.

The "airport designation" regulations, requiring the Administrator to approve any field used for civilian flying or for hangaring planes, have been amended by the Civil Aeronautics Board.

The new amendment repeals Sections 43.800, 43.801 and 43.802 and is another step in the campaign to remove wartime restrictions on private flying.

Weather Bureau Will Explore the Mystery Of the Thunderstorm

Exploration of thunderstorms, uncharted hazard to flying, is being started this spring in an elaborate research program in Florida at Orlando, St. Cloud and Pine Castle. The project is being conducted by the Weather Bureau under direction of Dr. H. R. Byers, Thunderstorm Research Meteorologist, with the Army and Navy cooperating.

Storms Unpredictable—Thunderstorms constitute a particular hazard to flying, according to the Weather Bureau, because they are often local in nature, form suddenly and cannot always be isolated on large-scale weather maps. Many pilots attempt to fly through such storms and come to grief. In the six-year period from 1938 to 1943 thunderstorms were the "contributing cause" in at least 32 civil aircraft accidents.

On the other hand, some types of thunderstorms are not dangerous to flying and may be traversed with comparative safety. The researchers hope that the project will yield enough facts about the formation of thunderstorms and their behavior so that a weather forecaster or even a pilot can determine whether a particular storm is dangerous or harmless and, if it is dangerous, whether a plane ought to turn back or might safely go over or around it.

Elaborate Equipment—In carrying out the project specially-equipped Army P-61s piloted by veteran fliers, pilotless aircraft furnished by the Navy and sailcraft furnished by the Soaring Society of America will fly through thunderstorms to make meteorological observations.

Four large Army radar sets have been installed in the Orlando area to be used for keeping track of meteorological balloons released during the storms. A network of 55 ground weather observation stations has been established, three mobile weather stations are available and six of the latest type "rason" instruments, capable of making upper-air observations of temperature, air pressure, humidity and wind direction and velocity up to a height of 12 miles, will be used.

To Fly Through Storms—When a thunderstorm is sighted, P-61 "Black Widows" carrying meteorological instruments, including a device to register wind gusts, will fly through the storm at selected intervals and at elevations of 5,000, 10,000, 15,000, 20,000 and 25,000 feet.

The ground stations will at the same time make observations. The mobile stations will be sent to selected areas, and after the airplanes have finished their flights meteorological balloons carrying miniature radios equipped to transmit signals indicating temperature, humidity and air pressure will be released to make upper air soundings.

According to the Weather Bureau, the Florida thunderstorm is of the single-cell type, made up chiefly of moist tropical air. This type of thunderstorm differs from the multicellular type occurring in the Middle West which is made up of various combinations of tropical and modified polar air.

To Explore Mid-west Storms—Next year plans have been made to set up the project some place in the Central Plains States to study the more complicated type of thunderstorm, and it may be that the project will carry over into a third season with research conducted in some other part of the country.

The University of Chicago, National Advisory Committee for Aeronautics, the Air Transport Association, the Soaring Society of America, and nationally known meteorologists from the Massachusetts Institute of Technology and the University of California are participating in the project.

Flight Plan Service For Private Pilots Is Resumed by CAA

As a service to the growing number of private pilots, the Civil Aeronautics Administration on April 5 resumed its prewar practice of accepting flight plans from any airmen who wish to file them.

Filing a flight plan with the CAA's 37,000 mile airway network assures the pilot that if he should fail to arrive on schedule, search and rescue procedures will be initiated promptly. On the flight plan the pilot gives his name, airplane type, destination, airspeed and estimated time of arrival.

Because the heavy volume of military traffic overloaded CAA communications facilities, it was necessary during the war to limit the filing of flight plans. They were accepted only for trips made under "instrument flight rules." Instrument flight rules apply when visibility is restricted and CAA traffic controllers must know the whereabouts of aircraft to keep them separated.

Report Arrival—CAA communications stations will now accept plans for "contact" flights and hold them until the pilot has an arrival report sent back by the CAA station nearest his destination. Eugene Sibley, Director of CAA Air Navigation Facility Operations Service, emphasizes that it is the pilot's responsibility to report his arrival and request transmission of that information to the station holding his flight plan. Since failure to do so may start a costly search, a fine of \$25 will be assessed against any pilot neglecting to report completion of his flight plan.

Search Assured—If the station holding the flight plan does not receive an arrival report within an hour after the estimated time of arrival it will query the station nearest the pilot's destination, and if no reply is received in an hour the query will be repeated. If information still is lacking, an "alert notice" will be sent throughout the area. One hour thereafter, or a total of three hours after the pilot should have reported arrival, the CAA airway traffic control center will start search and rescue procedure. It may solicit the aid of state police, forestry service, scheduled air carriers, military organizations or any group or individual who might be of assistance.

The new flight plan procedure has been approved by the CAA Advisory Committee on Non-scheduled Flying, which discussed the problem at its last meeting.

Sinclair Succeeds Herman As Head of Aviation Training

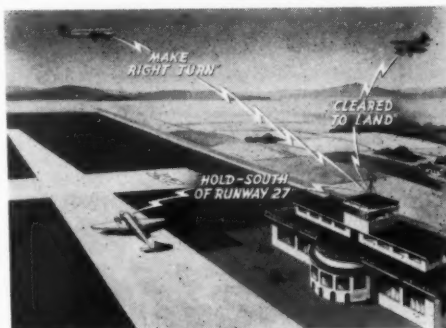
Acceptance of the resignation of M. Justin Herman as Assistant Administrator for Aviation Training and appointment of Howard W. Sinclair as his successor has been announced by T. P. Wright, Administrator of Civil Aeronautics.

Mr. Herman, who returned recently from service in the Navy, will go to San Francisco where he will direct the Northern California program of the National Housing Agency. He pioneered in the CAA's pre-flight aviation training program in the nation's schools and Administrator Wright expressed his deep regret at Mr. Herman's decision.

Mr. Sinclair was born in Portland, Maine, and educated in the schools of that state. He attended Oberlin College at Oberlin, Ohio, and spent several years in business in his own and other companies. He has been with the Federal Government for 11 years.

In 1942, he joined the CAA, serving in the air education activities of the Administration during the inauguration of this program. He has been assistant to the head of that department for several years.

ANC Standard Airport Traffic Control Book on Sale



Shown above are three aircraft in various landing and take-off stages, being maneuvered into a traffic pattern which keeps them at safe distances from each other.

This is one of the 16 illustrations used in the revised "Army-Navy-CAA Standard Airport Traffic Control Procedures" to demonstrate to tower controllers standard methods for handling traffic.

Attractively designed, the new book is on sale for 25 cents a copy at the Superintendent of Documents, Government Printing Office, Washington, D. C.

The procedures are basically the same as those set forth in the preceding edition. This version, however, has been brought up-to-date in respect to the former wartime restrictions, and the recent changes in Part 60 of the Civil Air Regulations, such as the new weather minimums. Wording of some of the items has been changed in accordance with suggestions of the field personnel of the three services.

Use of this book is required by Part 26 in all civil airport control towers operated by non-federal agencies, as well as CAA and military towers.

Don't Request Special Service, Plane Registration Office Asks

To expedite service to the aviation public in processing aircraft registration and ownership certificates, the Civil Aeronautics Administration has requested that no special inquiries concerning such certificates be made by telephone or personal visits.

The flow of surplus military planes into commercial use, plus the increasing production of new civil planes, has increased the backlog of registration applications to more than 10,000 according to John T. Morgan, Chief of the Certification and Recordation Section.

"Because of serious personnel shortages we are forced to cut out special services in order to keep up with the increasing volume of routine work," Mr. Morgan said.

"It will also be necessary," he said, "to defer action on improperly submitted applications in favor of those prepared in correct form for immediate processing."

"We eliminate these special services reluctantly, after first initiating all possible internal steps for improving the efficiency of our operations. In addition to reorganizing our flow of work, on the basis of studies by our own and outside agencies, we are expediting the preparation of a single form combining the certificate of ownership and the bill of sale; exploring the possibility of using one document instead of two to cover both the certificate of ownership and the certificate of registration; and developing with other government agencies a system for transferring aircraft titles among them without issuing new documents."

Air Schools Given Six Ratings Under New Requirements

Air schools seeking CAA approval may now decide for themselves whether to give their private and commercial pilot trainees the advantages of ground courses or confine their instruction to flight training.

Under the Board's new air school requirements, "Airman Agency Certificates" (Part 50) issued April 30, graduates from an approved primary or commercial flying school do not have to have ground school courses to their credit. Accordingly, ground schools and flight schools are given separate ratings.

Five Classifications—Ground schools meeting the requirements listed in the new Part 50 are rated as basic or advanced. Flying schools are given primary, commercial, instrument and flight instructor ratings. An applicant with the proper facilities, equipment, personnel and curricula may obtain an airman agency certificate with a rating for any one or all of these classifications.

For Own Good—While the written test given to the student pilot in the primary school prior to his cross country solo flight is confined to 25 questions on Part 43 and the contact rules of Part 60, it's obviously to the pilot's advantage to understand his machine and its realm—the weather. Groundwork in the use of radio aids and navigation techniques will also extend his flying skill. Many pilots will want to take ground school courses for their own safety and the safety of their passengers.

Written examinations for commercial pilots require the same thorough knowledge as before of the subjects listed for advanced ground school ratings. However, it is now up to the commercial flying school giving the flight training to decide how the student shall get the knowledge he needs.

Flight instructor schools are required to give ground courses in methods of teaching students how to fly, and instructors for such ground courses must have a flight instructor rating. Ground school is also a requirement for an instrument flying school rating, with instructors possessing instrument ratings.

Runway Length Liberalized—Exceptions to the required 1800-foot landing strip length are now allowed for primary flight schools. Landing areas with runways down to 1500 feet may be approved if the applicant can demonstrate that the plane he uses can take off fully loaded within half of the runway length and will clear all obstacles in the take-off path by at least 50 feet.

Ground and flight schools can operate without CAA approval. However, the standards listed in Part 50 serve as a guide to operators in organizing well-rounded training courses. Approved flight schools also can offer students the specific advantage of being able to reduce instruction time. Graduates of approved schools are eligible for private pilot certificates after 35 hours total flying time, and for commercial pilot certificates, after 160 hours. Unapproved school graduates must have 40 hours, private pilot, and 200 hours, commercial pilot.

How to Apply—Those desiring to pattern their ground or flight schools along CAA approved standards may obtain without cost a copy of the new Manual 50 based on the revised Part 50 from the CAA Office of Aviation Information, Department of Commerce, Washington 25, D. C. Application for an air agency certificate is made on forms available from the local CAA inspector, and returned to him when the school is ready for inspection.

Get Local Airport Plans in Shape, Wright Urges Communities as Airport Bill Passes Congress

(Continued from page 53)

Cities Can Apply for Aid—"Unless prohibited by state law, any public agency, such as a city, county, or several such units acting jointly, can then apply to the CAA for financial aid on a project called for in the national plan, giving all information necessary to determine whether it is in accordance with CAA technical standards.

"When the CAA approves a proposed small airport—that is, Class 1, 2, or 3—the act specifies that it shall pay 50% of the allowable cost. In the case of Class 4 or larger airports, the CAA may pay any portion of the allowable cost it sees fit, up to 50%. CAA must also obtain advance Congressional approval of its schedule of larger airport projects.

"What is meant by allowable cost? This includes (1) the expense of plans and surveys which may be incurred after passage of the law, but either before or after the CAA approves a grant; (2) reasonable costs of construction work on the field itself and on administration buildings, but not on hangars; and (3) a part of the land cost. The U. S. share of the land cost is to be 25%, except that on larger airports this is a maximum, to be paid at CAA discretion.

"A special provision of particular interest to Western states is that the United States pay up to 62½% of cost in states where public lands exceed 5% of the total area."

Airport Shortage—Describing the deficiencies in our present airport situation, Mr. Wright said:

"The most recent count by CAA shows only 4,100 airports—good, bad, or indifferent, civil or military—for the more than 16,000 communities of the nation. This compares with about 2,400 ten years ago, an airport increase of only 70% in a period when aviation activity generally has multiplied perhaps 1,000%. It is hard, of course, to find a common denominator for measuring aviation activity, but the increase over the last ten years is at least 1,000% in terms of such important factors as number of pilots, and passenger miles flown by the airlines.

"To visualize in more familiar terms the inadequacy of our airports, just suppose that only one-fourth of the cities and towns of this nation had paved streets, and that among these streets many were paved with cobblestones and wide enough only for two-way traffic without parking.

"Recognizing the importance of automotive transportation to our economy, we would deem our highway system very backward indeed, and progressive business men, through their chambers of commerce, undoubtedly would organize vigorous programs to promote better roads.

"Well, we are in just that bad a way when it comes to airports. True, the airplane as yet does not have the same broad utility in our everyday life as the automobile, but no wide-awake business man is unaware of its vital and ever-growing importance to commerce.

"In many communities, to be sure, business groups have been among the most active supporters of airport construction or improvement projects. By and large, however, it cannot be said that there has been real recognition of our airport needs, or positive action would have gotten under way earlier.

No Airport Plan—"On the 20th of this month, the Civil Aeronautics Administration will mark the 20th anniversary of the creation of a federal agency to regulate and foster civil aviation. Few laymen realize that during these two decades, we have worked at our task with one very important tool missing. We never have been given the authority to plan and execute a national system of civil airports.

"In our early years, we were allowed to build emergency landing fields as adjuncts to the airways sys-

tem of navigation aids. During the thirties, we were given an advisory role in the expenditure of relief and public works funds on airports. And since 1940 we have administered a 400-million dollar program of defense airports.

"The Federal Airport Act, however, represents the nation's first planned effort to develop a civil airport system worthy of the name.

"Under this bill, we hope to correct the gross maldistribution of airports which exists in the United States today. When we drew up our National Airport Plan, 1,441 counties, or 47% of all counties in the United States, were without airports.

"The airports we do have in many cases are located where land is cheapest, without regard to distance from centers of population. Where the airports are closer in, they frequently have no room to expand in accordance with requirements of traffic which has been developed since they were built.

Small Airports at 1939 Level—"Our most urgent need, today, is for small airports to serve the swelling ranks of private fliers and local commercial air services, and here there actually has been a decline. From 2,117 small, so-called Class 1 and 2 fields in 1939, the total dropped to 1,791 in 1944. V-J Day gave the 'go signal' for the opening of some new small fields, but the total has climbed only a little beyond the 1939 level, in the face of much greater demands by airport users.

"Perhaps yours is the exceptional community whose airport needs are pretty well taken care of at the present time. Nevertheless, you have reason to be concerned about the deficiencies in our airport system as a whole. For remember, if you are to get any real use out of the airplane either as a personal vehicle or as a common carrier, you must consider not only whether there is a good base for operations from your home town. You must ask the even more important question, 'How many places are there with airports to which I can fly?'

"The prospective airplane purchaser will, or at least he should, ask himself: 'Is there a landing field near Centerville, where my folks live? Are there airports in the towns where I do business?'

"If he buys a plane without considering these factors, very likely he will give it up in a year or two because he's not getting enough use out of it to justify the cost. A CAA survey shows that more than 60% of plane purchasers did exactly that in the years 1931 to 1939. Thus the whole aviation industry, and to some degree the entire national economy, suffers from the gaps in our airport system.

Adequate Distribution—"That is why we call our proposal for airport construction and improvement a 'National Airport Plan.' It is aimed at achieving a uniformly adequate distribution of airports—for town and country; for heavily populated industrial areas, and for states with long stretches of sparsely settled land between population centers.

"To attain this goal, we have proposed construction of 3,050 new airports, and improvements of 1,625 existing fields. Of the 3,050 new fields, approximately 2,900 would be in Class 1 and 2, the smaller fields, where our greatest postwar deficiency lies. Total estimated cost of this program, in terms of 1944 prices, was one billion dollars exclusive of land and buildings.

"No doubt we will have to revise these figures as to specific detail, since they were drawn up in the middle of 1944. The picture on disposal of surplus military ports is clearer now; there has been some civilian construction during the intervening period; costs have risen; and the Congress decision that 500 million dollars should be the federal share may require some trimming of projects."

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Henry A. Wallace
Secretary of Commerce

Civil Aeronautics Administration
T. P. Wright, Administrator

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Q—I am planning a hunting trip by plane into Canada. Do I need advance permission from the U. S. State Department, or the Canadian government? G. H.

A—No specific permission from either government is necessary for a pleasure flight. However, you must clear through a port of entry in the United States and land at a port of entry in Canada where you must explain what you are going to do and get clearance. Ports of entry are listed in the Airman's Guide.

Q—May I get a pamphlet of instrument approach procedures covering the major U. S. airports? L. J.

A—The instrument approach procedures pamphlet published by the CAA was discontinued several years ago. However, the procedures for each major airport are now issued in chart form by the Coast & Geodetic Survey, Department of Commerce, Washington 25, D. C., and are available at 10 cents a copy from that office or from their authorized agents.

Alaskan Airlines Fly Food From U. S. to Meet Shortage

In an exemption order issued April 17 the Civil Aeronautics Board granted permission for all Alaskan airlines to fly freight and cargo between points in Alaska and Seattle, Washington, until June 1.

The Board was advised by the Department of the Interior, the President of the Anchorage, Alaska, Chamber of Commerce, and the Director of the Civil Aeronautics Board's Alaska office that due to steamship service interruption between Seattle and Alaskan points stocks of meat and other essential supplies would be exhausted within two weeks. All foodstuffs are at their lowest inventory in years. The Board's order stated that the existing transportation facilities are at present unable to replenish these vital stocks. In temporarily removing the economic regulations that restrict Alaskan Airlines from operating between Alaska and Seattle, the Board said that "several Alaskan air carriers have suitable equipment and are ready and willing to make special charter flights for the purpose of transporting essential food and other necessary freight."

It was indicated that the population of Anchorage is increasing daily because of the influx of inbound spring passenger traffic, and a greater inbound air movement to Alaska is anticipated during the coming months. Other Alaskan cities in addition to Anchorage were said to be similarly affected by the shortages.

CIVIL AERONAUTICS JOURNAL

Aeromedical Field Extended to Plane Design, Operations

"A fair percentage of aviation accidents now attributed to pilot error may in fact be engineering errors," Dr. William R. Stovall, Chief of the CAA Aviation Medical Division, told the Aero Medical Association at its 17th annual meeting at Chicago.

This concept comes under the heading of "Aeromedical Design and Material" in CAA's new three-fold approach to aviation medicine—man, materiel and operations. Until now, CAA attention has been confined to selecting pilots to fit the current aircraft.

Design Hazards—"Designs which handicap the pilot are well known as contributory factors to aviation accidents," he said. "Poorly placed instruments and awkwardly arranged controls contribute to inefficiency as well as to early fatigue. Projecting and unprotected parts are recognized hazards in crash landings."

He rated as necessary to the future design of aircraft the determination of levels of human tolerances and safe limits for attention, responsibility, fatigue, noise and vibration; optimum patterns for bodily comfort, and for escape and survival equipment. Stratosphere flying will require study of pressurization, explosive decompression and of oxygen supply as they effect widely varying types of persons who will comprise the air traveling public.

Operational Hygiene—With the advent of air travel between countries, Dr. Stovall called attention to new health problems. The 5-day to 2-week incubation period of the ordinary infectious diseases, while not critical in steamship travel, has possible serious consequences in travel by aircraft.

"Of equal significance is the exposure of operating personnel and passengers to unhygienic conditions at ports of call in areas lacking adequate local enforcement of recognized public health measures. Such protective measures as fall within the purview of the several public health agencies must be properly coordinated. The air traffic industry must assume its fair share of the responsibility for the hygienic safety and comfort of air personnel and passengers."

New Waiver Policy—In discussing CAA's present waiver policy for pilots with physical defects, Dr. Stovall explained that since flying is a complex act, impairment of a single function does not affect all fliers alike. The applicant's total performance is now considered rather than his failure to meet an arbitrary standard in any one or more particulars.

Previously, waivers for physically handicapped applicants were given only to pilots who were experienced fliers before loss of a member or other injury and could still demonstrate their ability to manage a plane well. The theory was that once having had the advantage of experience in the use of a member, the pilot could compensate for its loss.

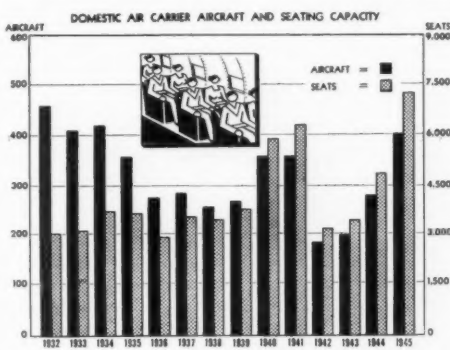
A person who wanted to learn to fly, but who did not meet the basic physical standards, was automatically excluded. This allowed an experienced pilot with major defects to continue to fly while his neighbor with a defect only slightly in excess of that permitted by regulations remained on the ground.

Allowed Test—Under present waiver policy a physically handicapped applicant is given the opportunity to demonstrate his ability to fly on the theory that an individual being conscious of his handicap strives harder to excel, and often obtains proficiency greater than that required for safe performance.

"Obviously, cases of organic disease which are progressive in nature are not amenable to waiver," Dr. Stovall said. "It is, however, possible to measure performance in the presence of most static conditions and structural defects. The criterion, in any instance, is the relative liability to produce sudden incapacity."

Transport Planes Growing In Size and Number

Domestic air carriers have been gradually rebuilding their fleets since 1942 to replace planes appropriated by the military services and to meet their rapidly expanding volume of business. At the start of 1945 domestic airlines had 279 planes in operation. With final victory, transport production received the "green light," and the armed forces released many transports for commercial use. By the end of 1945 the domestic airlines had 411 aircraft in operation—a gain of 132 planes and 47% for the year.



These facts and other valuable statistical data and charts on the growth and development of civil aviation in the United States are contained in the December 1945 issue of the "CAA Statistical Handbook."

Less Freight, More Passengers—Between 1932 (first year that average available seats per plane were reported) and 1944, there was a 63% rise in the total available seating capacity of domestic airlines despite a drop of 39% in the number of planes in operation. This seeming paradox was due to the sharp increase in average available seats per plane which mounted from 6.58 to 17.53 seats.

By the end of 1945, the combination of more and bigger planes boosted total available capacity to 7,488 seats—20% above the previous peak of 6,250 seats in 1941.

Using Larger Planes—Available seating capacity continues to increase as the domestic airlines get delivery on the bigger planes they have on order. Five Lockheed Constellations went into service in January and six more in February; four converted Douglas C-54's were placed in operation in January and seven additional in February, 1946.

The new CAA Statistical Handbook is available for 25 cents from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Test-flight Scene Moved from Factory to Distribution Point

New airplanes manufactured under type certificates may now be inspected and test-flown at a distribution point, instead of at the factory. The change is designed to reduce costs to small-plane manufacturers, who formerly were required to assemble planes for test and then disassemble them for shipment.

F. M. Lanter, Assistant Administrator for Safety Regulation, explained that the change was made at the request of manufacturers who found it more economical to manufacture the planes in one plant and assemble them elsewhere.

"This is another step," Mr. Lanter said, "in the continuous CAA campaign to encourage flying and lower the costs of small-plane ownership. The inspection given at the distribution point will be as rigid as that formerly given at the factory, so the purchaser will have full assurance that his plane is airworthy."

CAA Offers to Aid States in Selecting Vet Flight Schools

The facilities of the Civil Aeronautics Administration have been made available for the guidance of veterans planning to take flight training under the "GI Bill of Rights." In accordance with this policy, Administrator T. P. Wright has sent offers of cooperation to the governors of all states, which under the law are responsible for designating schools as eligible for training contracts with the Veterans Administration.

Standards Already Set—Citing CAA experience in the training of 435,000 students under the Civilian Pilot Training Program, Mr. Wright said that greater safety in pilot training can be assured if flying schools follow certain minimum standards. The CAA, he pointed out, approves and issues certificates to schools meeting such standards.

"If you believe that the adoption of CAA standards will assist you in your designation of flying schools to the Veterans Administration," Mr. Wright told the governors, "this Administration will do everything possible to obtain prompt inspection in order to facilitate early certification of additional schools."

Mr. Wright suggested further that veterans studying for a private pilot certificate be encouraged to take ground school training as well as flight instruction. The CAA certifies ground schools, and it has also helped high schools and colleges establish courses giving basic ground school instruction.

Make Wise Selection—The veteran should be aided, Mr. Wright said, not only to select a school wisely, but to consider carefully the purpose for which he is taking the training.

"With the thousands of trained and experienced pilots coming out of the military services," Mr. Wright warned, "the veteran who is just starting his flight training is not likely to find immediate employment opportunities as a pilot upon completing training of a vocational type."

If the veteran is learning to fly as a hobby, Mr. Wright said, he should consider how much of his "entitlement" he wishes to spend for an avocation.

Mr. Wright pointed out that the CAA has no power under its own enabling legislation or under the "GI Bill of Rights" to require a school to comply with its standards. There are some well-managed schools, he added, which do not hold a CAA rating, but the majority of non-approved schools do not comply with CAA minimum standards.

Advice to Veterans—"The CAA's only interest," Mr. Wright explained, "is to foster the sound development of civil aviation. Naturally we want to see thousands of persons learn to fly, as they undoubtedly will under the recent amendments to the 'GI Bill of Rights.' We want these newcomers to become boosters for aviation, however, not disillusioned critics. This is our advice to veterans: if you want to fly as a hobby, get the safest and best training you can at reasonable cost; if you want to earn your living in aviation, check your employment opportunities carefully before you start flight training of a vocational type, which may cost a large part of or even more than your full entitlement under the 'GI Bill of Rights.'"

Milwaukee-Pittsburgh Time Cut

A speed record of 95 minutes for a 477-mile non-stop commercial flight between Milwaukee and Pittsburgh was set April 2 by a Pennsylvania-Central Airlines four-engined DC-4 plane. Regular flight time is 2 hours 46 minutes. A 90-mile tailwind at 9000 feet and a light load favored the record flight.

Cuban, Danish and Dutch Carriers Given Transport Routes to U. S.

In line with mutual exchange of air carriers permits by the United States and other countries, the Civil Aeronautics Board within the past month has granted four foreign air carriers transportation rights to the United States in accordance with the degree of reciprocity existing between the U. S. and the country involved.

The foreign air carriers include two Cuban lines, one from Denmark and one from the Netherlands.

Havana-Miami Service—The Cuban airlines Compania Cubana de Aviacion, S. A., a subsidiary of Pan American Airways, Inc., and Expreso Aereo Inter-Americano, S. A., are authorized to carry persons, property, and mail between Havana, Cuba, and Miami, Fla., on three-year permits.

Both Cubana and Expreso have held previous temporary permits over these routes, with Expreso still operating an express service into Miami.

The present service was granted on the basis of "public interest" since we do not have a formal air transportation agreement with Cuba. In case we enter into a treaty, convention or agreement with that country on these routes during the next three years, service will continue under the provisions set up.

Well-traveled Routes—The heavy volume of air passenger travel in the past between Havana and Miami presages a future increase in trade and travel which will justify several additional services between this country and Cuba, the Board believes.

Present air transportation is limited to Pan American, except for Expreso's cargo service. Fifteen applications by U. S. companies to provide service between the United States and Cuba were included in the Latin American proceeding which is now before the Board for decision. The Cuban government has never objected to operations into Cuba by U. S. carriers, the Board pointed out, and no objection is anticipated as these operations are enlarged.

Denmark to U. S.—The foreign air carrier permit granted Danish Air Lines (DDL) authorizes service between Copenhagen, Denmark, and the alternate U. S. terminal points New York and Chicago as long as a U. S. carrier has permission from Denmark to operate over the same route. American Overseas Airlines now serves Copenhagen from the United States.

DDL's intermediate points on the route are areas of the United Kingdom, Eire, the Azores, Iceland, Greenland, Newfoundland and Canada.

An air transport services agreement between the United States and Denmark accords U. S. and Danish carriers rights of transit and nontraffic stop in each other's territory, as well as traffic stops.

Under the present arrangement American Overseas flying on its route from the U. S. to Denmark may stop at Copenhagen, pick up and discharge international traffic in passengers, cargo and mail bound in and out of Denmark and proceed to its next stop.

Danish Air Lines on its route from Denmark to the U. S. may pick up and discharge international traffic at New York on one flight or at Chicago on another flight but it cannot serve both cities on the same flight. DDL is the Danish airline designated by the Danish government to operate domestic, transatlantic and European services for 20 years from June 1, 1945.

Netherlands Service—The Royal Dutch Airlines (KLM) was granted service between Amsterdam, Netherlands and New York under the International Air Transport Agreement known as the "Five Freedoms Agreement," which includes the right to put down and take on certain classes of international traffic. The agreement calls for through services on a reasonably direct route out from and back to the carrier's homeland.

Intermediate stops on KLM's route are points in the United Kingdom, Eire, Newfoundland and the Azores, the latter point being included as an alternate

stop to allow for weather conditions on the northern route.

A second foreign carrier permit allows KLM to serve Miami from Willemstad, Curacao, Netherlands West Indies for three years on "public interest" grounds. Intermediate stops are Aruba, NWI; Port-au-Prince, Haiti; Kingston, Jamaica; and Camaguey and Havana, Cuba. KLM has operated in the Caribbean area since 1935, and during the war was given a series of temporary permits for Curacao-Miami service.

Use American-made Planes—The Dutch air carrier now has on hand six DC-3's with which it conducts England-Portugal service, and 14 C-54's leased from the Netherlands government with which it operates its service to the East Indies. In addition it has on order four Lockheed Constellations and four DC-4 aircraft.

DDL's transatlantic services will be operated temporarily with converted B-17 aircraft pending the delivery of Douglas DC-4's which are on order. This airline plans triweekly schedules.

Cubana plans to use Douglas DC-3A planes fully provided with emergency over-water equipment, two-way radio-telephone and direction-finding apparatus, and Expreso will use Lockheed Lodestar 14-passenger planes likewise equipped for over-water, day and night flying.

Gas Turbine and Jet Engine Specialist Returns to CAA

Major R. C. Schulte has returned to the Civil Aeronautics Administration as Gas Turbine and Jet Engine Specialist with the Powerplant Engineering Division.

Major Schulte went on active duty with the Army Air Forces in September 1942 and was assigned to Headquarters in Washington as project officer on gas turbine and jet engine research and development. During his tour of duty, he spent several months in Germany with Army Air Technical Intelligence, obtaining first-hand information from German engineers on the development of jet propulsion engines in Germany.

Prior to entering the service, Major Schulte spent several years with the Flight Engineering and Factory Inspection Service of the CAA in Region 1 before being transferred to the Aircraft Engineering Division in Washington.

His new assignment with the CAA will involve type certification of gas turbine and jet engines, a process quite similar to that in effect for the conventional or reciprocating engine.

A manufacturer desiring that his gas turbine engine be approved for installation in civil aircraft submits to the Powerplant Engineering Division technical data which fully describe the engine and its operation, the official calibration and endurance testing, as well as the inspection of the engine parts after testing. These official tests are witnessed by CAA inspectors.



R. C. Schulte

International Flight Permit Requirements Summarized by CAA

The requirements for the navigation of U. S. civil aircraft abroad, foreign registered aircraft here, and the export of U. S. aircraft are summarized in the first Foreign and International Service Release issued by the International Activities Division of the Civil Aeronautics Administration. Other instructions concerning international travel will be issued from time to time.

U. S. Outbound Flights—On the part of the U. S. Government for its own nationals, all aircraft flying out of the country must meet CAA airworthiness standards, and the pilots must hold the proper CAA pilot certificates.

U. S. scheduled air carriers engaging in foreign commerce must have a certificate of convenience and necessity for this service from the Civil Aeronautics Board, and an operating certificate from the CAA. Nonscheduled or charter operators are not as yet required to have these certificates.

Finally, when flights are to be made into or through the Panama Canal Zone, special permission must be obtained from the CAA Aircraft and Components Service.

Flights over and into other countries, however, generally require authorization from the foreign government involved and permits may be obtained through our State Department or, in some cases, through diplomatic representatives of the country. The CAA Foreign and International Service may be used as the channel for obtaining such permits.

Foreign Flights to U. S.—The U. S. Government requires the owner of foreign aircraft flying into, over, or from this country to file a foreign aircraft permit application with either a CAA inspector located in a border area, a factory inspector, or with the CAA Aircraft and Components Service. If the flight does not involve the carriage of passengers or cargo for hire, or mail, and the country of foreign registry extends a similar privilege to U. S. civil aircraft, CAA border or factory inspectors may issue the Foreign Aircraft Permit. In all other cases the permit may be issued only by the Aircraft and Components Service.

Flight of Canadian tourists or private aircraft into the United States, and the flight of similar U. S. aircraft into Canada, do not require prior permission from the respective aeronautical authorities.

Airworthiness Agreements—Agreements for reciprocal recognition of airworthiness certificates for export now exist between the United States and Belgium, Canada, Denmark, Great Britain, New Zealand, Norway, Sweden and the Union of South Africa. We also have a special understanding in this matter with Australia. A certificate of this nature is evidence that the aircraft meets United States safety standards, and any additional standards prescribed and filed with the United States by the country importing the planes.

Attention of aircraft manufacturers is called to the fact that an export license must be obtained from the State Department before exporting U. S. aircraft.

Essair Asks Time Extension

Essair "local" carrier operating in Texas on a temporary 3-year certificate effective until September 31, has asked the Board to extend its certificate for either a 5- or 3-year period from Aug. 1, 1945, when it actually started service. Essair is also asking authorization for service between any two or more points on its route in addition to its regular through service.

Civil Aeronautics Administration Marks 20th Anniversary

Aviation Has Achieved Great Advancement Since the Establishment of CAA in 1926

The Civil Aeronautics Administration this month marks the 20th Anniversary of federal regulation and fostering of civil aviation.

When President Coolidge signed the Air Commerce Act on May 20, 1926, he vested in the Department of Commerce the first specific governmental responsibility for what was destined to become a great new industry. Today a handful of CAA veterans remaining out of the 200 who started the agency can recall those infant years of aviation and put in true proportion the tremendous strides made in two decades.

Size Then and Now

The pioneers who launched the Aeronautics Branch of the Commerce Department in 1926 had the task of nurturing an industry which produced in that year just 658 civil aircraft. The 1946 output is expected to be 50 times that number.

Exactly 5,782 citizens ventured to ride the airlines which the 1926 forerunners of CAA inspectors checked for safety. This year it is estimated that 10,500,000 passengers will ride scheduled U. S. carriers with the knowledge that their operating practices meet high CAA standards.

The 1926 traveler could cover 8,404 route miles by air. By the end of 1946, the routes of U. S. airlines will extend for approximately 150,000 miles.

The "wild blue yonder" was populated by 1,572 certificated pilots in 1927, and this year is expected to see the CAA pilot rolls reach 345,000.

To light the sky roads in 1926, there were 2,041 miles of Federal Airways. "To light" is literally what they did, for there were 719 beacon lights and only 17 radio broadcast and marker stations. This year the CAA airways system will cover 41,000 miles, offering pilots comprehensive radio guidance for navigation and landings in almost any weather and in every important community of the United States, and in an ever expanding coverage of the globe.

Aviation was an insignificant source of employment when CAA was born. Earliest available records show 5,486 working in the manufacturing phase during 1927. CAA estimates production employment will reach 250,000 by the end of 1946.

CAA at "Grass Roots"

In making its contribution to the growth of U. S. civil aviation, the CAA itself has grown from an organization of 222 employees in 1927 to more than 10,000 today. CAA personnel are scattered over the entire United States and in many foreign countries—only 10% of the total are located in Washington.

The bulk of CAA employees, approximately 8,200, are engaged in the construction, operation and maintenance of air navigation facilities, such as radio communications stations, air traffic control centers and towers, instrument landing systems and the like.

Only 836, or 9% of all CAA employees, are engaged in all phases of safety regulation work. This group carries the heavy responsibility of inspecting for safety every civil aircraft that is flown, from the time a manufacturer seeks an approved type certificate for the prototype until the plane has completed its years of service and can no longer pass the CAA annual inspection for airworthiness. They also pass upon the competency of applicants for certificates as pilots, mechanics, control tower operators and other types of airmen and air agencies.

To make possible prompt inspection service for the rapidly mounting numbers of airmen and aircraft without burdening the taxpayer, the CAA currently

is delegating responsibility to qualified persons in the industry. By the end of the year, there will be approximately 1,000 "deputies" who are authorized to inspect aircraft and 2,000 who can give flight tests.

In addition to airways and safety regulation activities, CAA maintains a small Office of Aviation Training which in the last four years has been responsible for stimulating and assisting about half of the nation's high schools to introduce aeronautics studies. This office also conducts the Inter-American Aviation Training Program for pilots, mechanics and airways technicians from the other American republics.

The CAA Office of Airports directed the Defense Landing Area program, which built more than 500 large airports since 1940 at a cost of \$400,000,000. Meeting primarily the requirements of the armed

forces, these were located, wherever possible, to be of continuing use in peacetime. The CAA Office of Airports will have the task of fitting these fields into the \$500,000,000 national airport program under which CAA would match local contributions for building some 3,000 new landing areas and improving 1,600 others.

CAA World-wide

The world-wide growth of United States air operations during the war and the prospect of continued heavy international flying on a civil basis has prompted establishment of the CAA Office of Field Operations which coordinates foreign activities of the organization. It is expected that a total of 16 foreign offices will be established in the future; three are already in operation, at Rio de Janeiro; Lima, Peru; and Balboa, C. Z.

The overseas responsibilities of CAA have been increased greatly by the President's recent order transferring to the Department of Commerce responsibility for airways aids outside the United States which have become surplus to the armed forces.

Airways Service Operates Over Vast Network; Employs Over Three-fourths of CAA Personnel

Federal Airways, which started as one of the "CAA Twins," now is the biggest member of the family, operating nearly 40,000 miles of airways and employing more than three-fourths of all CAA personnel.

Airways Division and Regulation Division were the first parts of the CAA's predecessor organization to get organized and under way. Each of them borrowed from existing federal government agencies then concerned with aviation. Airways men originated partly from the air-mail service of the Post Office Department and the Lighthouse Service of the Commerce Department, and were recruited also from military and civilian sources. For the purposes of "house-keeping" within the Commerce Department, the Airways Division was put into the Bureau of Lighthouses of the Department.

First Airway Tracks

Early in 1927, employees of the division were authorized to survey the 2,000 miles of airways. They began, literally, at the grass roots. They drove and flew through the country picking out farmers' fields which would do for intermediate landing fields. They surveyed sites for location of radio range stations and revolving beacons. They negotiated for power and telephone lines, prepared drawings, plans for the construction of radio shacks, towers for revolving beacons, emergency field boundary markers and all the things on the ground that go to make up an airway.

The experiences of individuals in this work are the stuff that keep gatherings of CAA old-timers in conversation material. They were humorous, and tragic, and they color the real pioneering chapters of the airways story.

World Follows

Having produced the airway, these employees then flew it and tested it in actual operation. As the airways were extended, a smooth-working organization of personnel was built up, methods and equipment improved, leading to the day when airmen of the entire world looked to the CAA for leadership in airways. CAA methods and equipment have been adopted as standard in Australia and Canada and the CAA has played a major role in framing the technical standards of PICAQ, the international civil aviation organization.

In 1933, the two divisions were consolidated into

the Bureau of Air Commerce. District offices were established for the maintenance and operation of the airways and to carry out the functions of the inspection service. The logical growth from this arrangement was into CAA regions covering large areas of the U. S., now numbering seven, with another region in Alaska and another in Hawaii.

Airways always considered the requirements of the airlines and extended the airways as new air services were offered to U. S. cities.

Branches Out

In 1939 Congress first appropriated funds for the establishment of airways outside continental U. S. and a few radio range stations were established in Alaska and in the Hawaiian Island areas. The airlines were looking toward over-ocean extension of their services, and were discussing airway aids with the CAA when the war began to threaten.

The needs of national defense changed the whole complexion of the airways, and plans were made domestically and in Alaska and Hawaii for better service to the military. When the war came, instead of being caught with the vast wilderness which was Alaska, the Army found a system of airways there which was nearly comparable to that in the U. S.

World-wide Network

Airways engineers were ordered to the four corners of the world. One of them made 14 Atlantic crossings in 16 months, in the business of tearing down airways facilities on the domestic airways and rushing off with them to some remote spot where the Air Transport Command or the tactical and combat forces of the Army and Navy needed flying aids.

The work done by Airways during the war is the best indication of how well the beginners built. Traffic on the airways during the war was 85% military. Airways extended its influence and assistance down through the Pacific islands, across the North and South Atlantic and around the world into China. For a global air war, 95 veterans of Airways service stepped into military uniform and helped give this country the impetus in successful air transportation which ultimately spelled much of the word victory.

Today, Federal Airways has a world-wide field in which to work. Those facilities which they helped to install and are now surplus to the military have been turned over to the CAA by executive order, and wherever U. S. flag air carriers go about the world, there will be the old familiar CAA airways aids.

Airports Have Increased Tenfold Since 1926, But Aviation's Growth Still Outstrips Supply

Twenty years ago there were about 400 airfields in the United States listed as "reliable despite rotation of crops." Only about three of these had paved runways, and none exceeded about 3,000 feet in length.

Today there are more than 4,000 airfields—a high percentage with paved runways, lighting equipment for night operations, and control towers to direct traffic.

Yet today's airfields are as inadequate in number as those of 1926. Aviation has taken such giant strides in the interval that today's crying need, like that of 20 years ago, is more airport facilities in convenient locations.

Design for Airports

Throughout its history, the CAA and its predecessor organizations have had two principal aims as to airports. First, the design and construction of airports adequate in size and facilities for safe operation which was the responsibility of the airport division. Although the law gave the federal men no positive power with which to enforce their standards, they were able through close cooperation with municipalities and with airport engineers to avoid the building of unsafe airports. The second aim was to see that every airport contributed directly to a national airport system. The growth of the airlines, and the construction of new airways were guiding factors in this aim.

Building Spurts

Between 1925 and 1930 the enthusiasm of the promoters of aviation resulted in several spurts in airport building. The Ford Reliability Tours, starting from Detroit and making large swings about the country, dramatically called attention to the possibilities of the airplane for personal and freight transportation, and resulted in many a city bond issue for airport construction.

The flights of Lindbergh and others about the world, and their subsequent tours throughout this country also focussed attention on the need for landing facilities. Many of these tours of the United States were undertaken by the principals solely to boost aviation, and promote interest in more airports.

The work relief programs of the depression times proved a boon to airport construction. Through the WPA, the ERA and the FERA, many a city and town obtained an airport. Like any other public utility, the airport is a good item in a public works program.

Serve Double Purpose

The greatest spurt in airport construction came, however, in World War II, when the military had to consider the need for airports for possible defense of the country against aerial attack, and the facilities needed for training quickly the largest air force in the world. Several agencies built airports. The CAA built 525, at a cost of \$400,000,000. There was an important feature of this program, however, in that the CAA attempted to locate those airports so they would be valuable for civilian use after the war. Thus, the CAA was able to build war facilities for future peacetime use, and the cities which cooperated agreed to operate these fields for the benefit of all the people.

As a result, we now have an excellent start in providing the large airports we need. The CAA's National Airport Plan of 1944 proposed 3,000 new airports of which 2,900 will be small ones for the use of private fliers.

In some respects, however, the terminal airport problem today is more acute than ever. The growth of airline schedules now brings up the question of multiple airports at certain cities, or the construction of an entirely new and larger commercial airport.

Air traffic congestion in the New York City area, particularly in bad weather, sometimes grounds commercial flights as far away as Richmond and Cleveland. This is a foretaste of what we can expect in busy areas throughout the nation as passenger and cargo operations expand, unless airport expansion is rapid.

Airport Lack Is Handicap

Private flying is being severely handicapped by lack of landing facilities within the limits of big cities. Suppose a man with a private plane wants to visit a city 100 miles away. It may take him an hour to get to his airplane, hanged at a field far from his home. The flight itself might take an hour. When he reaches his destination, it may take him another hour to get into the business section of the town he is visiting. For practical purposes, this man's trip was made at an average of only about 33 miles an hour, instead of the 100-mile-an-hour speed of his airplane. In addition, he has suffered inconvenience at both ends of the journey. The solution is obvious—more and more conveniently located airports.

In most respects, the airplane has been greatly improved since 1926. But planes of 20 years ago, with their low wing loading and large wheels, could take off readily from small, rough fields with runways of 2000 feet. Today's large transport planes require runways of approximately 5,000 feet in length, expensively constructed to withstand the impact of 50-ton loads.

The Office of Airports of the CAA stands today on the verge of one of the largest airport building programs in history, even including the wartime program. Even before Congress had decided on the principle of 50-50 matching of federal funds by cities and states, hundreds of new fields were being planned and constructed by returning service men establishing small businesses, and other hundreds of fields closed by the war were being reopened. This privately financed activity is expected to continue, and even to be increased by the government program.

38 CAA Employees Still With Agency They Helped Start

Several dozen Civil Aeronautics Administration workers still are with the organization they helped bring into being in 1926.

The organization now known as the CAA was created legally on May 20, 1926, when President Calvin Coolidge signed the Air Commerce Act. It began to operate with the beginning of the next fiscal year, July 1, 1926, and all who came to work in that first year might be considered as "Charter Members" of the organization.

Most of the earliest employees were transferred from three government agencies which had been working in aviation matters. Those who had assisted in the pioneering of air mail with the Post Office Department since 1918, a few from the Army Air Corps, and a large group from the Bureau of Lighthouses in the Department of Commerce, were transferred and continued to do the same sort of work in a greatly expanded way.

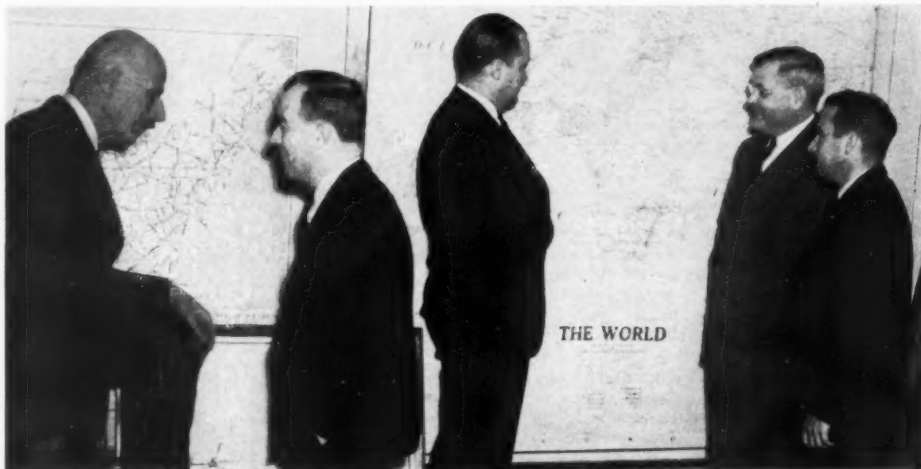
In some cases, individuals were not working that first year as Aeronautics Branch employees, but their time with Lighthouses, for example, was so monopolized by aviation matters that they were, in effect, with the new branch.

Following are among the employees of the CAA with approximately 20 years of service:

George M. Bailey, W. R. Behn, Clarice B. Booth, William Boesch, Margaret Carr, Thomas H. Chapman, Cletus M. Estep, Christine S. Fox, L. M. Hammond, Donie Hatch, Judy Hevener, W. T. Huntress, William E. Jackson, Stafford Kernan, W. E. Kline, William C. Klietsch, Chris Lample, Joseph LaBaie, L. W. Lawrence.

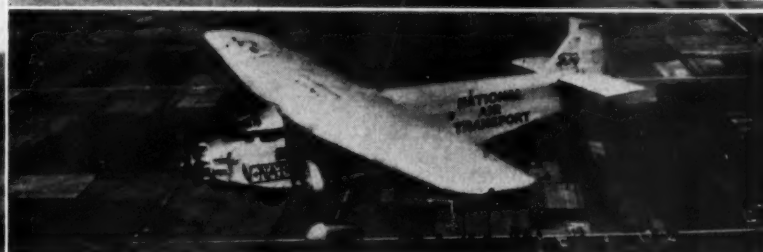
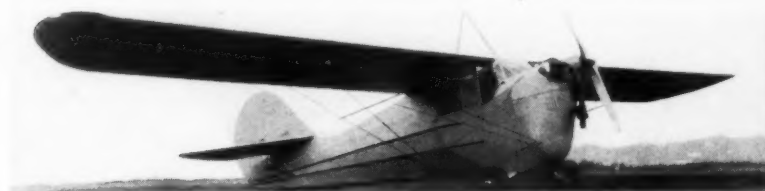
Also: Mildred S. Llewellyn, Michael J. Lucanish, W. J. Mackenzie, Amanda Martin, Charles McComas, Kathryn Miller, Cornelia Muddiman, Lillie Nielson, Grace Oberholtzer, Alvin O. Preil (now in military service), Arthur Ruderman, Dorothy M. Shanley, Eugene L. Sibley, Hazel Q. Smith, John E. Sommers, Charles I. Stanton, G. E. Stratton, Thornton D. Taylor, Mary Wilson.

Share Almost a Century of Airways Experience



These five CAA officials have a combined experience of almost 100 years in building and operating airways. They are, left to right: George E. Stratton, Principal Airways Engineer; Charles E. Wise, Chief, Construction Section; Chris M. Lample, Director, Air Navigation Facilities Service; Harry W. Howard, Chief, Airways Engineering Division; and Arta H. Hadfield, Assistant Chief, Airways Engineering. Each has served with CAA during approximately 20 years.

Memory-stirring Views from Civil Aviation's Early Days



Upper left: This Aeronca, carrying one person and using a 26-horsepower engine, is generally regarded as the "father" of light airplanes. Lower left: Early revolving beacons of this type, many still in use, initially were spaced 10 to 15 miles apart to guide pilots along airways at night. Upper right: In this early method of daytime-marking of airways, the wooden arrow indicated the direction of the airway. Center right:

James L. Kinney (left), working under supervision of Clarence M. Young (right) who was Director of the Aeronautics Branch, made hundreds of "under the hood" landings in pioneering instrument-landing experiments. Lower right: The famous Ford trimotor transport was standard equipment on airlines for several years following 1928; some of the craft are still being used in Latin America.



Men who played extensive and important parts in the early development of civil aviation are shown in this group photograph, taken between sessions of the Airways Division Conference of the Aeronautics Branch of the Department of Commerce at Washington, February 8, 1928. Left to right: John Bonforte, A. J. LaBaie, Alfred Wait, Wm. T. Miller, Frank Tower, Henry Walls, John Sommers, W. E. Kline, W. O. Snyder, G. C.

Miller, Alvin Smith, W. E. Jackson, A. Pendelton Taliaferro, Jr., Dr. Louis A. Bauer, G. E. Stratton, Daniel Scarrett, Eugene Sibley, W. T. MacCracken, Jr., Wm. Kenyon, F. C. Hingsburg, Ted Haight, J. H. Lucas, C. I. Stanton, Stanley Boggs, Wm. Centner, Gerald Fitzgerald, Bert Creighton, T. H. Chapman, I. D. Marshall, J. P. Worthington, Walter Avery, Erland Curtis, and Thomas B. Bourne.

Safety Staff Guides Flying Through Stunt Days to Big Industry

There was a time when anybody could fly an airplane anywhere he wanted to and in any manner he pleased.

Those were the days before 1926, when no federal or state rules about flying were in effect. Aviation was fast growing out of the cornfield and pasture in which pilots who returned from World War I had nurtured it. Some far-sighted barnstormers were settling down at established airports, contemplating extension of the very few scheduled air carrier activities, and wondering whether they could persuade people to come to their fields and learn to fly.

The persuading was difficult. Pilots still wore fancy clothes, such as whipcord pants, leather leggings, and goggles and helmets. They still strutted a lot, and the airplanes they flew cracked up often. People accepted the "superman" idea about airplane pilots, and some pilots killed themselves in daredevil flying to perpetuate the idea.

But there were serious-minded people in the industry who saw the trend, and who realized that some sort of safety rules and regulations must be enforced if the industry was to grow. It was these individuals who were responsible for establishment of the first federal agency to supervise the growing, potentially great industry. They urged federal legislation for the sake of safety in flight. One of the first activities of the new Aeronautics Branch of the Commerce Department in 1926 was to license pilots and airplanes, and to establish standards of safety in the design, construction and operation of aircraft.

Nothing, over the 20 years of the CAA's history, has been more important to the sound development of aviation than these standards. Even today, when the industry has grown to the point where CAA has had to delegate much of its inspection work, and when the states also have realized their responsibility to their citizens in the matter of safe flight, the CAA Office of Safety Regulation works hard to bring about even greater safety of those who fly their own planes and those who buy rides on commercial planes.

13 Inspectors

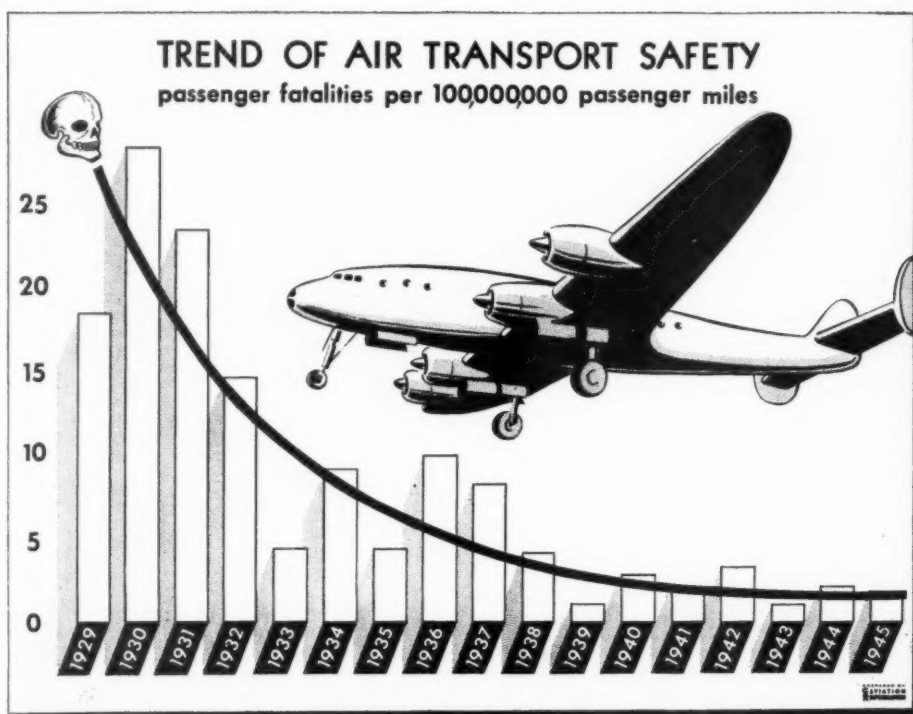
The Office of Safety Regulation as it is today is a far cry from the early days in 1927, when there were but 13 inspectors to do the tremendous job ahead of them, the certification of pilots, aircraft and operations.

Methods were different too. A pilot who wanted to fly merely wrote in to the Aeronautics Branch. He was issued a letter of authority to fly until one of the overworked inspectors could find time to give him a written examination. In some cases pilots who had been given authority to fly, later failed the examination and had to be grounded.

Nowadays, the aviation industry "sits in" on the making of all regulations. The Office of Safety Regulation enforces the regulations, and sometimes recommends changes in them. But the regulations themselves are made by the Civil Aeronautics Board. In enforcing the safety rules of the Board, the inspectors in the field, work hand in hand with the aviation industry, the airlines, and the private operators and fliers.

Accident figures speak well for the work of the Office of Safety Regulation. Back in 1927, for example, there was one fatal accident for every 315,789 miles of non-air-carrier flying. By 1942, however, the fatal accident rate had dropped to one per 2,082,217 miles.

The record of safety improvement on scheduled airlines has been equally spectacular. In 1929, the first year for which figures are available, there was one passenger fatality for each 5,357,143 miles of flight. By 1944, the figure was 47,172,551 miles—almost 2000



times around the earth—for each passenger death.

It was hard for the public to take aviation seriously back in 1926, when "flying" and "accidents" were identical in the public mind. Foresighted enthusiasts, in and out of government, frowned on the daredevils and on sensational stunts which enterprising pilots concocted to improve their financial standing. But when one of these stunts was successful, and public interest in aviation blossomed temporarily, everybody welcomed the accomplishment.

Give Advice and Counsel

Such events were those in 1927, when Lindbergh, Brock and Schlee, Haldeman, Chamberlain and others were finding out how much the airplane could do. Even here the Bureau inspectors, charged with safety, were at the pilot's elbow advising and assisting and granting approvals for the abnormal flights they contemplated.

Thousands of individuals have sought the advice and counsel of these men and are still seeking it by the hundreds every day. Today, the Safety Regulation Inspector is laboring under the workload of aviation interest begotten by a worldwide air war, but he still makes time to advise and counsel, a role of ever increasing importance.

Work Expands

With the progress of aviation, the work of the Safety Regulation office has increased and changed materially. The first important enlargement of its activities was caused by the "empire-building" of the airlines as they expanded their services from coast to coast and ordered new and different planes. Protection of the flying public required assurance that airline personnel was competent, and that its equipment was airworthy and properly maintained. This is handled by the Flight Operations Service.

Today, an additional job is handed the office. As United States flag air carriers extend their routes about the world, CAA offices are being opened in 16 foreign cities. There, CAA inspectors will go about their jobs of assuring the safety of the flying public, and, at the same time, act as agents of good will to foreign nationals in whose country they are located, always fostering aviation progress.

Aeronautics Heads 1926-46

Executives and policy-makers for the Civil Aeronautics Administration and its predecessors during the last twenty years follow:

William P. MacCracken, Assistant Secretary of Commerce in Charge of Aeronautics, from 1926 to 1927.

Clarence M. Young, Director of the Aeronautics Branch of the Department of Commerce from 1926 to 1929. Mr. Young was Assistant Secretary of Commerce for Aeronautics from 1929 to 1933.

Ewing Y. Mitchell, Assistant Secretary of Commerce, 1933 to 1934.

Eugene L. Vidal, Director of the Aeronautics Branch of the Department of Commerce, later Bureau of Air Commerce, from 1933 to 1937.

J. Monroe Johnson, Assistant Secretary of Commerce from 1935 to 1938.

Fred J. Fagg, Jr., Director of the Bureau of Air Commerce from 1937 to 1938.

Dennis Mulligan, Director of the Bureau of Air Commerce for a few months during 1938.

Edward J. Noble, Chairman of the Civil Aeronautics Authority from 1938 to 1939 and Under Secretary of Commerce from 1939 to 1940.

Robert H. Hinckley, Chairman of the Civil Aeronautics Authority from 1939 to 1940 and Assistant Secretary of Commerce from 1940 to 1942.

Clinton M. Hester, Administrator of the Civil Aeronautics Authority from 1938 to 1940. The Authority was reorganized during Mr. Hester's tenure and he became Administrator of Civil Aeronautics Administration.

Donald H. Connolly, Administrator of the Civil Aeronautics Administration from 1940 to 1942.

William A. M. Burden, Special Aviation Assistant to the Secretary of Commerce from 1942 to 1944 and Assistant Secretary of Commerce from 1944 to date.

Charles I. Stanton, Administrator of the Civil Aeronautics Administration from 1942 to 1944.

Theodore P. Wright, Administrator of the Civil Aeronautics Administration from 1944 to date.

Traffic Volume Best Workload Yardstick

(Continued from page 53)

tion goes up. This is entirely apart from the question of whether charges are imposed for the use of these facilities.

"The cost of the airways (including new construction) per passenger mile of traffic on the domestic airlines (taking no account of the service given to the military and the private flier) in 1945 was less than half of what it was in 1934. If 1947 traffic estimates prove accurate, the cost in that year will be half what it was in 1945 and far less than that if all contract charter and air taxi operations and private flying, to say nothing of military aircraft, are included as of course they should be.

"In evaluating the annual cost of the Federal Airways system it is well to remember that that cost is made up of two main components—cost of operation and cost of construction—whose trend is determined by very different factors.

Operations Cost—"The cost of operation is governed primarily by the number of miles of routes in operation and the completeness of the facilities operated. The mileage of federal airways which was only 30,913 in 1941 will be about 43,000 in 1947 so the country is now pretty well crisscrossed with airways. The route mileage is therefore not likely to increase nearly as rapidly in the future as it did prior to the war. New towns can be joined to the airways system by adding a few single facilities instead of requiring the construction of many miles of new airways as was true in the past.

Construction Period—"In contrast to operations and maintenance expenses the cost of constructing airways facilities (now that relatively few miles of airways are added each year) do not follow a regular trend. They remain at a low level for years on end until technical progress culminates in the development of new equipment which makes the existing plant obsolete and requires heavy expenditures for its replacement. Technical progress also results in the development of new types of equipment from time to time which must be added to the existing plant, thus increasing construction costs. We spent very little on airways construction from 1927 to 1940 except for adding new routes, but our present equipment is now obsolete and we are entering a period of heavy construction expense for the next two or three years, just as the airlines are now replacing their fleets of obsolete aircraft. The existing network of low frequency radio ranges which was designed some fifteen years ago is currently being replaced by a system of VHF radio ranges and supplemented by instrument landing systems at 105 key airports—an expensive construction job.

"This modernization program, of which this 1947 appropriations request represents a portion, was originally planned to begin in 1941 but was delayed for over four years because of the war. It was finally started on a very modest scale last fall and it is planned to complete it by the end of 1947. Any delay in meeting this schedule will have a most serious effect on the safety and regularity of American civil flying and thus on the rate of its growth.

Favor Costless Service—"It is of passing interest," Mr. Burden comments "that those activities of CAA which consist solely of providing service to aviation at the expense of the general public—such as our airways and airport services—usually meet with the unqualified approval of the aeronautical world. If at some later date it is determined that charges should be made for airways facilities, I predict that they too will become controversial.

"However, in cases where the government's function involves a certain amount of control of aviation in the interest of safety, its activities are more open to criticism; and that part of CAA's work



which consists of carrying out the provisions of the Civil Aeronautics Act by enforcing the safety standards established by the Civil Aeronautics Board has historically always met with a mixed reception. Part of the flying public vociferously demands faster service from CAA even if that should mean more employees and larger appropriations. Another part appears to believe that there are 'thousands' of CAA inspectors who are principally engaged in oppressing the aviation public with unnecessary regulations.

9% Safety Regulation—"Actually, the safety regulations service of CAA accounts for only 9% of CAA's employees and 7% of its 1946 budget. Only 836 employees were engaged in safety regulation work on December 31, 1945. With this limited number of persons CAA carries out eight principal functions in the safety field.

"When civil aviation was a very small industry, it was possible for the federal civil aviation agency to carry out aircraft, airman and air agency inspection directly entirely with its own employees. This was a practical task in the prewar period. In 1939, for example, there were only 13,000 certified civil aircraft and 31,000 certificated pilots. Today there are over three times that number of airplanes and ten times that number of pilots, and in the next ten years we expect a total of 400,000 civil aircraft. Direct supervision of an industry of this size by federal employees is out of the question. Even if it were desirable, it would require a force of astronomical size. For some time CAA has, therefore, been developing plans whereby its safety regulation functions could be carried out efficiently without increasing its personnel in proportion to the increase in planes, airmen, and agencies.

Regulation Simplified—"Examinations in aircraft and engine structures, navigation, and meteorology have been eliminated for the private pilot despite grave prophecies by the more conservative aeronautical experts that it will result in a vast increase in the accident rate. Engineering analyses of new aircraft designs have been reduced to include critical items only; sampling methods have been developed in production inspection. We intend to continue in this direction and ultimately we believe that manufacturers can be licensed on the basis of periodic inspection, thus eliminating the necessity for the certificating of their individual products.

Delegating Inspection Work—"In addition to simplifying regulation, we have undertaken a campaign for the delegation of inspection functions to qualified persons not on the government payroll who will receive their compensation in the form of a fee

from the person examined. We have designated authorized examiners to conduct inspection of aircraft and tests of applicants for airman certificates—we expect to designate 1,000 individuals as aircraft maintenance inspectors (284 appointed to date) and 2,000 flight inspectors (1500 appointed to date) by the end of 1946. The former will pass on major repair work so that aircraft can get back into the air without waiting for a CAA inspector to make the rounds and perform the required annual airworthiness inspections. The latter will issue student pilot certificates and give the tests for private and commercial pilot certificates and mechanic certificates. Once sufficient properly manned district offices are established to supervise these designated representatives, very large increases in aviation activity can be handled with proportionately minor increases in CAA safety regulation personnel.

Still Need Safeguards—"As time goes on and the construction and operation of aircraft becomes a more routine performance, it will be possible to relax the degree of supervision over aircraft construction and airline operation. The number of serious and potentially serious situations which are uncovered by inspection today indicate that relaxation of the degree of inspection can proceed too rapidly, particularly in the transition period from war to peace when a large number of inadequately financed and technically borderline firms will inevitably enter both air transport and aircraft manufacture. Although inspectors at government salaries cannot be equal in talent to the engineers of our great aircraft companies, the principle of independent inspection has stood the test of time. Government inspection is still required in the railroad and steamship fields after generations of experience. And inspection of the mechanical condition of automobiles has been introduced in many states with beneficial results after a lack of inspection had demonstrably played its part in a huge accident toll."

In conclusion Mr. Burden said, "The Civil Aeronautics Administration today is faced with a civil aviation of three to four times the prewar level, and an estimated work load in fiscal 1947, 2.7 times that of 1941. To meet this load, it has requested appropriation for fiscal 1947 (excluding construction appropriations in both years) which are 1.9 times the 1941 level. This expansion in CAA does not mark the beginning of an indefinite sharply upward trend, but represents gearing up the organization to take on what in effect will be the concentration, in the next two years, of the four years of civil aviation growth of which we were deprived by the war, and the continuing expansion thereafter."

Airline Orders

Service

No. 4605 permits United Air Lines to inaugurate on March 16, nonstop service from Denver, Colo. to Ogden, Utah and between Ogden and Sacramento, Calif. on Route 1. (Mar. 21)

No. 4606 denies petition of the City of Springfield, Mo. for leave to intervene in the Cincinnati-New York-Additional Service Proceeding—Docket 221 et al. (Mar. 22)

No. 4607 fixes and determines fair and reasonable temporary rate of compensation to be paid Essair for mail transportation for the period beginning Aug. 1, 1945; orders that the proceeding remain open pending entry of orders fixing final rates of compensation. (Issued with an opinion—Mar. 22)

No. 4608 amends amended certificate authorizing Continental Air Lines to engage in air transportation over route 29 and orders that it be reissued in conformity to the Board's opinion and order dated May 17, 1945. (Mar. 18)

No. 4609 permits Chicago and Southern Air Lines to serve Paducah, Ky. on April 1, through the use of Paducah-McCracken County Airport. (Mar. 25)

No. 4610 permits Duluth Airlines to intervene in the North Central Case—Docket 415 et al. (Mar. 26)

No. 4613 permits Arizona Corp. Commission to intervene in the application of Arizona Airways and Transcontinental and Western Air—Docket 2005. (Mar. 26)

No. 4617 further amends amended certificates authorizing Western Air Lines to engage in air transportation over routes 13 and 19; amends certificate of Inland Air Lines to engage in air transportation over routes 35 and 28; orders that a certificate, effective until March 31, 1949, be issued to Ray Wilson, Inc., authorizing it to engage in transportation of persons, property and mail over 5 routes in the Rocky Mountain States Area; orders that a certificate, effective until March 31, 1949, be issued to Summit Airways, Inc., authorizing it to engage in the transportation of persons, property and mail over 3 routes in the Rocky Mountain States Area; approves relationship existing between Ray Wilson, Inc., and the Wilson-Bonifis Flying School; denies applications of Ray Wilson, Summit Airways, Western Air Lines and Inland Air Lines in all other respects; also denies the applications of Intermountain Air Lines, Colorado Airlines, Thomas Air Service, Pueblo Air Service, Frontier Airways, Inc., Braniff Airways, Massey and Ransom Flying Service, Mountain States Aviation and Challenger Airlines; dismisses applications of Airway Motor Coach Lines, Inc., Denver and Rio Grande Western R. R. Co., Hansen Flying Service, Rio Grande Motor Ways, Inc., and Salt Lake Transit, Inc. (Issued with an opinion—Mar. 28)

No. 4618 grants petitions of Western, Northwest and Pennsylvania Central Airlines for leave to intervene in the applications of TWA, American and United Air Lines for amendments of certificates. Dockets 2142, 2187 and 2207. (Mar. 29)

No. 4620 permits the Port of New York Authority of New York, N. Y. to intervene in the application of Pan American for a certificate—Docket 1803. (Mar. 29)

No. 4621 grants the petition of the Orleans Airport Commission, City of New Orleans, La., leave to intervene in the application of TACA, S.A. for a foreign air carrier permit—Docket 774. (Mar. 29)

No. 4622 temporarily exempts Pan American Airways from April 1 to Sept. 30, 1946, from the terms, conditions, and limitations of its certificate (Order No. 4375) insofar as they would prevent Pan Am from (a) originating and terminating flights at the intermediate points Lisbon and Natal; (b) temporarily suspending service at Bolama, Portuguese Guinea; (c) serving Dakar, Senegal; (d) serving Gander Airport, Newfoundland, in lieu of Botwood, Newfoundland; (e) serving Shannon Airport, Eire, in lieu of Foynes, Eire; (f) serving London through Burn and/or Bovingdon Airports in lieu of Croydon Airport; (g) temporarily suspending service on that portion of its route between New York and Natal via San Juan, Port of Spain, and Belem; (h) engaging in foreign air transportation between New York and Lisbon, Portugal via Gander Airport, Newfoundland and Shannon Airport, Eire; and (i) originating and terminating flights at Leopoldville, which flights operate between N. Y. and Leopoldville via Monrovia, Liberia, Lisbon, Portugal and Shannon Airport, Eire. (Mar. 29)

No. 4623 directs Northeast Airlines to show cause why the Board should not make final the findings and conclusions set forth in the Statement of Tentative Findings and Conclusions attached to this order, and upon the basis thereof fix, determine and publish the rates set forth as the rates of compensation to be paid Northeast for mail transportation on its entire system. (Apr. 1)

No. 4624 amends National Airlines' certificate for route 39 (a) to authorize extension from Pensacola via Tampa to Miami and (b) to include Panama City and Valosta as intermediate points; grants Thomas E. Gordon, d.b.a. Orlando Airlines, a certificate for 3 years authorizing air transportation of persons, property, and mail between the terminal points Orlando and Jacksonville; and between the terminal points Orlando and Tallahassee; approves application of Thomas E. Gordon under Sec. 408; dismisses application of City of Melbourne, Fla. and denies those of National and Orlando Airlines, in all other respects, and also the applications of Chicago and Southern, Eastern and Southern Airways. (Issued with an opinion—Mar. 28)

No. 4626 dismisses applications of Keeshin Air Freight and Associated Truck Lines, Inc. for certificates. (Apr. 2)

No. 4627 permits Pan American-Grace Airways to inaugurate on April 1, nonstop service between Guayaquil, Ecuador and Chichayo, Peru on Route FAM-9. (Apr. 2)

No. 4628 denies request of United Air Lines upon consideration of the notice of its intention to inaugurate nonstop service on Apr. 1, between Detroit, Mich. and Allentown, Pa., points on route 1. (Apr. 2)

No. 4629 orders that certain testimony taken in executive session (dockets 1948 et al. 1759, 1760, 1761 and 1764) be withheld from public disclosure until further order of the Board. (Apr. 2)

No. 4630 grants Det Danske Luftfartselskab A/S (Danish Air Lines) a foreign air carrier permit authorizing transportation between the terminal point Copenhagen, Denmark, intermediate points in Iceland, Greenland, Newfoundland, Canada, the United Kingdom, Eire, and the Azores, and the alternate terminal points New York, N. Y., and Chicago, Ill., subject to certain conditions. (Issued with an opinion—Mar. 1)

No. 4631 permits Chicago and Southern to inaugurate on Apr. 1, nonstop service between Evansville, Ind. and Memphis, Tenn., on route 53. (Apr. 4)

No. 4632 grants the City of Rockford, Ill. leave to intervene in the Great Lakes Area Case—Docket 535 et al. (Apr. 4)

No. 4633 grants Compania Cubana de Aviacion, S. A., and Expreso Aereo Inter-Americano, S. A., foreign air carrier permits authorizing the transportation of persons, property, and mail between Havana, Cuba, and Miami, Fla., subject to certain conditions. (Apr. 4)

No. 4634 grants Royal Dutch Airlines (KLM) a foreign air carrier permit authorizing transportation between the terminal point Amsterdam, the Netherlands, intermediate points in the United Kingdom, Eire, Newfoundland, and the Azores, and the terminal point New York, N. Y.; and, subject to certain conditions, for a 3-year period, between the terminal point Willemstad, Curacao, Netherlands West Indies, the intermediate points Aruba, Netherlands West Indies; Port-au-Prince, Haiti; Kingston, Jamaica; Camaguey, Cuba; and Havana, Cuba; and the terminal point Miami, Fla. (Issued with an opinion—Mar. 14)

No. 4641 grants petition of Alaska Airlines to intervene in the application of Arctic Air Service for a permanent certificate. (Apr. 8)

No. 4642 grants petitions of United and Pennsylvania-Central Airlines to intervene in the application of Northwest Airlines for amendment of certificates so as to authorize the consolidation of routes 3 and 69, etc.—Docket 2018. (Apr. 8)

No. 4650 denies petition of Atlantic-Western Airlines for leave to intervene in the Southeastern States Case—Docket 501 et al.—and to introduce evidence therein in support of its application filed on Sept. 24, 1945. (Apr. 8)

No. 4651 permits American Overseas Airlines to serve London, England on Apr. 15, through the use of Heathrow Airport. (Apr. 9)

No. 4652 grants Colonial Airlines permission to serve Syracuse, N. Y., Reading, Pa., Baltimore, Md., and Washington, D. C., on Apr. 15, through the use of the Syracuse, Reading and Baltimore Municipal Airports and Washington National Airport. (Apr. 9)

No. 4653 permits Colonial Airlines to inaugurate on Apr. 15, nonstop service between Syracuse, N. Y., and Washington, D. C., on route 71. (Apr. 10)

No. 4656 denies application of Transcontinental and Western Air for an exemption from the provisions of sec. 401 of the Civil Aeronautics Act, insofar as those provisions would otherwise prevent TWA from engaging in air transportation to and from Erie as an intermediate point on its route between Newfoundland and Lisbon, Portugal. (Apr. 11)

No. 4657 permits Mid-Continental Airlines to inaugurate on Apr. 15, nonstop service between Kansas City, Mo., and Shreveport, La., on route 26. (Apr. 12)

No. 4658 permits Mid-Continent Airlines to inaugurate on Apr. 15, nonstop service between Omaha, Neb., and Minneapolis-St. Paul, Minn. on route 26. (Apr. 12)

No. 4662 temporarily exempts Alaskan Air Carriers from the terms, conditions, limitations and restrictions of sec. 292.2 of the Economic Regulations and the provisions of Title IV of the Act, insofar as they would prevent the Alaskan Air Carriers from temporarily engaging in the transportation of property between points in Alaska and Seattle, Wash.; this exemption shall terminate June 1, 1946, unless extended by the Board. (Apr. 16)

No. 4663 revokes orders 1761 and 2461 which authorized United Airlines to suspend service at Lincoln and Grand Island, Neb. (Apr. 16)

No. 4664 permits Great Falls C. of C. to intervene in the North Central Case—Docket 415 et al. (Apr. 16)

No. 4665 grants petition of American Airlines to intervene in the application of Northwest Airlines for amendment of certificates so as to authorize the consolidation of routes 3 and 69. (Apr. 16)

No. 4666 grants petition of the City of Rockford, Ill., to intervene in the North Central Case. (Apr. 16)

No. 4668 denies applications of Caribbean-Atlantic Airlines for temporary exemption from the provisions of sec. 401 of the Act. (Apr. 16)

No. 4669 denies motion and petition of Moore-McCormack Lines requesting that the Board withdraw any recommendation it may have heretofore made to the President and that it reopen the Latin American Proceeding—Docket 535 et al. (Apr. 17)

Miscellaneous

No. 4611 approves an agreement by and between American Airlines and Pennsylvania-Central Airlines relating to use of space for installation of radio equipment at Detroit, Mich., Municipal Airport and Cross Bay Blvd., New York. (Mar. 26)

No. 4612 grants the City of Tulsa, Okla., permission to intervene in the application of American Airlines for approval of control of Mid-Continent Airlines by American—Docket 2068. (Mar. 26)

No. 4614 approves an agreement by and between National and Delta Airlines relating to emergency maintenance service at Jacksonville, Fla. (Mar. 26)

No. 4615 approves an agreement by and between United and Northeast Airlines relating to lease of shop space at LaGuardia Fld. (Mar. 26)

No. 4616 approves an agreement by and between American and TWA relating to sharing of utility charges for ramp lighting at Phoenix, Ariz. (Mar. 26)

No. 4619 permits American, Colonial, Eastern, Northeast, TWA and United Air Lines, Air Line Pilots Assn., International (A. F. of L.) the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees and the United Automobile Aircraft and Agricultural Implement Workers of America (CIO), permission to intervene in the application of Pennsylvania-Central Airlines for approval of proposed merger of Northeast Airlines with Penn-Central and of the transfer of the certificates of Northeast to Penn-Central. (Mar. 29)

No. 4625 approves an agreement by and between American and TWA relating to lease of lobby, office, and ticket space in building on Municipal Airport, Albany, N. Y. (Apr. 2)

No. 4640 grants Pacific Northern Airlines permission to intervene in the application of Northern Consolidated Airlines—Docket 2209. (Apr. 8)

No. 4661 grants National Airlines and the Commonwealth of

Massachusetts leave to intervene in the application of Pennsylvania-Central Airlines for approval of proposed merger of Northeast Airlines with Penn-Central. (Apr. 15)

No. 4667 approves interlocking relationships of J. C. James and Railway Express Agency, Inc. (Apr. 16)

No. 4670 approves interlocking relationships of W. Harry Johnson and Chicago and Southern Air Lines. (Apr. 17)

No. 4671 approves application of The Aviation Corp. for consent to and approval of the revocation of the Trust Agreement between The Aviation Corp. and Jesse H. Jones, Trustee. (Apr. 18)

Airman Orders

Suspensions

No. 4635 suspends student certificate of Chester B. Wenskoski until Aug. 26 because he flew outside the local flying area designated by his instructor when his student certificate had not been appropriately endorsed by a flight instructor, contrary to the provisions of sec. 43.52(c) of the Regulations. Wenskoski also violated other provisions of the Civil Air Regulations. (Apr. 8)

No. 4636 suspends private certificate of James McGowan Miller for 6 months because he performed acrobatics over the congested area of St. Clair, Minn., contrary to the provisions of sec. 60.104(b) of the Civil Air Regulations. He also violated other provisions of the Regulations. (Apr. 8)

No. 4638 suspends student certificate of Chester H. Schultz for 90 days because he flew on a cross-country flight from Newburyport to North Reading, Mass., when his certificate had not been appropriately endorsed by a flight instructor, contrary to the provisions of sec. 43.52(c) of the Regulations. (Apr. 8)

No. 4643 suspends private certificate of Walter H. Reuman for 6 months because he flew at altitudes of less than 200 ft., and ultimately caused the aircraft to crash into a tree 100 feet or less in height, resulting in demolition of the plane and damage to a nearby automobile, contrary to the provisions of Civil Air Regulation 60.101. (Apr. 8)

No. 4648 suspends student certificate of Clarence R. Saville for 3 months because he piloted an aircraft other than that of the type, class, and model which had been endorsed on his student certificate, contrary to the provisions of sec. 43.53 of the Regulations. Saville also violated secs. 43.100 and 43.101 of the Regulations. (Apr. 8)

No. 4654 suspends student certificate of William E. Lewis for 4 months because he circled a friend's home at an altitude of between 300 and 400 ft., cutting and opening the throttle, immediately after which he went into a spin and crashed to the ground, injuring himself and completely destroying the plane, contrary to the provisions of sec. 60.105(b) of the Regulations. He also violated sec. 60.101 of the Regulations. (Apr. 11)

No. 4655 suspends student certificate of John W. Rankin for 6 months because he made several passes over a congested area, reaching an altitude of as low as 400 ft., contrary to the provisions of sec. 60.105(a) of the Regulations. He also violated secs. 60.101 and 43.52(a) and (c). (Apr. 11)

No. 4659 suspends mechanic certificate of Charles S. Williams for 60 days because he certified that an aircraft engine had undergone a major overhaul in accordance with Part 18 of the Regulations when the starter and the carburetor were not in a condition to place the repaired engine in a condition equivalent to its original or a properly altered condition in regard to mechanical function, contrary to the provisions of sec. 18.6 of the Regulations. (Apr. 12)

Revocations

No. 4639 revokes student certificate of Douglas Burnside because he flew outside the local flying area designated by his flight instructor when (1) he had not flown at least 10 solo hours; (2) passed written exam on required provisions of Parts 43 and 60 and (3) when his student certificate had not been properly endorsed by his instructor, contrary to the provisions of sec. 43.52 of the Regulations. Burnside also violated sections 60.105(a) and 60.101 of the Regulations. (Apr. 8)

No. 4644 revokes student certificate of Billie D. Morgan because he dived at and buzzed a house at an altitude varying from 50 to 200 feet, contrary to sec. 60.101 of the Regulations. He also violated sections 60.105, 43.52(b) and 43.52(c) of the Regulations. (Apr. 8)

No. 4645 revokes commercial certificate of Lester A. Reeves, Jr., because he performed acrobatics over a congested area of Washington, D. C., contrary to the provisions of sec. 60.104(b) of the Regulations. Reeves also violated sec. 60.101, 60.105 and 43.409 of the Regulations. (Apr. 8)

No. 4646 revokes airman certificate of William R. Putnam because he piloted a civil aircraft in the vicinity of Homer, Alaska, carrying a passenger, contrary to sec. 43.50 of the Regulations. Putnam held a student certificate until Aug. 9, 1945 and then a private certificate. The violation occurred June 13, 1945. (Apr. 8)

No. 4647 revokes private certificate of Richard R. Ardaiz because he performed acrobatics at low altitudes over an open-air assembly of persons, contrary to sec. 60.70 of the Regulations. Ardaiz also violated sec. 60.3503 of the Regulations. (Apr. 8)

No. 4649 revokes student certificate of Gerald D. Cushman because he dived and circled at an altitude below 500 ft. over a congested area, contrary to sec. 60.101 of the Regulations. He also violated provisions of sections 60.105 and 60.104(b). (Apr. 8)

Miscellaneous

No. 4604 amends Board order No. 4263 concerning revocation of private certificate of Joel Eck, to read "It is ordered, That the proceedings be and they are hereby dismissed." (Mar. 21)

No. 4637 denies request of Albert E. Stearns for reconsideration of the Board's order of revocation—No. 4373. (Apr. 8)

No. 4638 dismisses Administrator's complaint concerning Northeast Airlines' holder of an air agency certificate with aircraft engine repair station rating. (Apr. 12)

Regulations

Amtd. 20-2 Effective Mar. 22, 1946

Pilot Certificate and Ratings—Part 20 of the Civil Air Regulations is amended as follows:

20.12 Limited Pilot Certificate. A citizen of a foreign (See Regulations page 65)

CAA and CAB Releases

Copies of CAA releases may be obtained from the CAA Office of Aviation Information. CAB releases are obtainable from the Public Information Section of the Board. Both offices are located in the Department of Commerce Building, Washington 25, D. C.

Administration

"Joint Committee Formed to Study New York Air Traffic Congestion"

"CAA Chooses 1500 Flight Examiners to Give Pilots Better Service"

"Gillies Named to CAA Advisory Committee on Non-Scheduled Flying"

"New CAA Manuals Cut Information Needed by Private Flier to One-Eighth Former Size"

"CAA Asks Cooperation in Speeding Certificate Service"

"CAA Resumes Prewar Flight Plan Service for Private Pilots"

"Radar Now Being Developed by CAA as Promising Airway Aid for Commercial Aviation"

"CAA Directed to Take Over 200 Foreign Flying Aids"

"CAA Directs Publication of Aviation Education Source Book"

"CAA Jet and Turbine Expert, Home from War"

"Tarrington, Marshall get CAA International Posts"

"Airports Need No Longer Be Designated"

"CAA Says You Just Lost Ten Pounds, Mr. Air Passenger"

"Veterans, States Offered CAA Guidance on 'GI' Flight Training"

"CAA Authorizes Distributors to Test-fly New Planes"

"New Aviation Statistics Handbook on Sale"

"CAA Publications Consolidated in New 'Airmen's Guide'"

"CAA Announces Deadline for Inspection of Aircraft"

"Sinclair Appointed to CAA Education Post Succeeding Herman"

(Speeches)

"Aviation Medicine and Physical Standards for Airmen" by Dr. William R. Stovall, Chicago, Ill., April 7-9, 1946

"What It Is and What It Does," by William A. M. Burden, Boston, Mass., April 12, 1946

"Air Facilities of the Future," by S. E. Travis, Jr., Dallas, Tex., April 22, 1946

"Airports," by T. P. Wright, Atlantic City, May 2

Board

"Rocky Mountain States Area Decision"

"Northeast Airlines Mail Rate Case"

"Florida Case Decision"

"Danish Airlines (DDL) Foreign Air Carrier Permit"

"Modification of Public Counsel Functions"

"Royal Dutch Airlines (KLM) Foreign Air Carrier Permits"

"Compania Cubana de Aviacion and Expreso Aereo Inter-Americano Foreign Air Carrier Permits"

"Exemption Order for Alaskan Airlines"

Trans-Canada Asks U. S. Stops

Trans-Canada Air Lines has applied for foreign air carrier permits for service to five U. S. cities. The proposed routes are Toronto-Cleveland; Halifax-Boston; Toronto-Chicago; Port Arthur-Duluth; and Victoria-Seattle.

MAY 15, 1946

Air Regulations . . . As of May 1, 1946

TITLE	PART No.	PRICE		DATE LATEST EDITION		No. AMENDMENTS ISSUED	
		Part	Manual	Part	Manual	Part	Manual
Aircraft							
Airworthiness Certificates.....	01	\$0.05	None	10/15/42	None	1	
Type and Production Certificates.....	02	.05	\$0.10	3/1/41	3/15/45		
Airplane Airworthiness—Normal, Utility, Aerobatic, and Restricted Purpose Categories.....	03 1	Free	None	11/13/45	None		
Airplane Airworthiness.....	04	.15	.45	11/1/43	7/1/44	3	1
Airplane Airworthiness Transport Categories.....	04-01	Free	None	11/9/45	None		
Engine Airworthiness.....	13	.05	None	8/1/41	None		
Propeller Airworthiness.....	14	.05	No stock	7/15/42	6/1/45	1	
Equipment Airworthiness.....	15	Free	No stock	4/15/44	7/1/38	1	
Radio Equipment Airworthiness.....	16	.05	No stock	2/13/41	2/13/41		1
Maintenance, Repair, and Alteration of Aircraft, Engines, Propellers, Instruments.....	18	.05	.50	9/1/42	6/1/43		
Airmen							
Pilot certificates.....	20	.05	None	7/1/45	None	2	
Airline Pilot Rating.....	21	.05	None	10/1/42	None	3	
Lighter-than-air Pilot Certificates.....	22	.05	None	10/15/42	None	1	
Mechanic Certificates.....	24	.05	None	7/1/43	None	1 1	
Parachute Technician Certificates.....	25	.05	None	12/15/43	None	1	
Traffic Control Tower Operator Certificates.....	26	.05	None	10/10/45	None		
Aircraft Dispatcher Certificates.....	27	.05	None	10/1/43	None	3 1	
Physical Standards for Airmen.....	29	.05	None	1/10/46	None		
Operation Rules							
Air Carrier Operating Certification.....	40	.10	None	10/10/44	None	2 1	
Scheduled Air Carrier Operations Outside Conti- nental U. S.....	41	Free	None	9/1/45	None	1	
General Operation Rules.....	43	.05	None	7/1/45	None	5	
Foreign Air Carrier Regulations.....	44	.05	None	7/1/45	None		
Transportation of Explosives and other Dangerous Articles.....	49	.05	None	7/1/45	None		
Air Agencies							
Flying School Rating.....	50	.05	Free	1/15/46	4/1/46		
Ground Instructor Rating.....	51	.05	None	12/15/43	None	1	
Repair Station Rating.....	52	.05	Free	10/1/42	2/41		
Mechanic School Rating.....	53	.05	No stock	8/1/42	5/40		
Parachute Loft Certificates and Ratings.....	54	.05	None	1/21/43	None		
Air Navigation							
Air Traffic Rules.....	60	.05	.15	8/1/45	10/45	1 1	
Scheduled Air Carrier Rules.....	61	.10	None	2/1/44	None	6 1	
Miscellaneous							
Rules of Practice Governing Suspension and Revo- cation Proceedings.....	97	Free	None	7/6/45	None		
Definitions.....	98	.05	None	10/15/42	None		
Mode of Citation.....	99	Free	None	11/15/40	None		
Regulations of the Administrator							
Aircraft Registration Certificates.....	501	Free	None	3/31/43	None		
Recordation of Aircraft Ownership.....	503	Free	None	3/31/43	None		
Notice of Construction or Alteration of Structures on or near Civil Airways.....	525	Free	None	7/23/43	None		
Seizure of Aircraft.....	531	Free	None	12/8/41	None		
Reproduction and Dissemination of Current Exami- nation Materials.....	532	Free	None	1/15/43	None		

¹ Certain aircraft may comply with the provisions of this part or the 11/1/43 edition of Part 04. ² Special regulations 340 and 340A. ³ Special regulation 355. ⁴ Special regulations 319, 319C and 361. ⁵ Special regulation 361. ⁶ Special regulations 323A, 323B and 361.

Note: Those parts and manuals for which there is a price are obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Remittances should be by check or money order, payable to the Superintendent. Currency is sent at sender's risk. Amendments and free Parts are obtained from the Publications Section, Civil Aeronautics Board, Washington 25, D. C.; free Manuals and Regulations of the Administrator from the CAA Office of Aviation Information, Dept. of Commerce, Washington 25, D. C.

Regulations

(Continued from page 64)

government who holds a currently effective pilot certificate or license issued by his government, upon submitting to the Administrator reliable evidence showing his pilot time and aeronautical experience may be issued a Limited Pilot Certificate appropriate to his pilot time and aeronautical experience shown. The holder of such certificate shall be familiar with the air traffic rules and shall not transport passengers or cargo where a charge is made for such transportation. The certificate shall contain such limitations as the Administrator finds necessary for safety, including but not limited to those which may be required by reason of the pilot's inability to speak and understand the English language.

Amdt. 41-1..... Effective Jan. 1, 1946

Airman Rules—Pilot Certificate—\$41.300(c) of the Civil Air Regulations is amended by striking the words "January 1, 1946" and inserting in lieu thereof the words "June 1, 1946."

Amdt. 43-5..... Effective Mar. 22, 1946

Repeal of War Emergency Regulations—\$43.8 through \$43.81 of the Civil Air Regulations are repealed.

Amdt. 61-6..... Effective Mar. 22, 1946

Multi-engine Fuel System—Part 61 of the Civil Air Regulations is amended by adding a new section as follows:

61.301 Multi-engine fuel system arrangement. On and after October 31, 1946, the fuel systems of scheduled air carrier multi-engine aircraft shall be arranged to permit operation in such manner that the failure of any one component will not

result in the irrecoverable loss of power of more than one engine. A separate fuel tank need not be provided if the Administrator finds that the fuel system incorporates features which provide equivalent safety.

Reg. 333-B..... Effective Mar. 22, 1946

Special Civil Air Regulations Serial Numbers 333 and 333-A are hereby repealed.

Reg. 362..... Effective April 12, 1946

The Civil Aeronautics Board, acting pursuant to the Civil Aeronautics Act of 1938, as amended, particularly sections 205(a) and 405(m) thereof, hereby makes and promulgates the following regulation:

Free travel for postal employees—Amendment No. 6 of Section 226.1 of the Economic Regulations

Effective immediately, subparagraphs (3) and (6) of paragraph (a) of Section 226.1 of the Economic Regulations, as amended, are hereby amended to read as follows:

"(3) The Assistant Postmaster General who at the time has jurisdiction over all the air mail service, his confidential assistant, and his Deputy Assistant Postmaster General.

"(6) The Superintendent, Thirteenth Division, Railway Mail Service, located at Seattle, Washington, and the Chief Clerk and Assistant Chief Clerk, Railway Mail Service, located at Anchorage, Alaska, when travelling between Seattle, Washington and Alaska or within Alaska on official business relating to the transportation of mail by aircraft to, from and within Alaska."

Domestic Air Carrier Statistics

Operations for March 1946

Prepared from official reports submitted by the air carriers listed, to the Civil Aeronautics Board

Operator and routes	Revenue miles flown	Revenue passengers carried *	Revenue passenger- miles flown	Express and freight carried (tons)	Ton-miles flown		Passenger passenger- sent-miles flown	Revenue passenger load factor (percent)
					Express	Freight		
All American Aviation, Inc., Pittsburgh-Huntington, Jamestown, Williamsport, Harrisburg, Philadelphia. Total	139,823	0	0	4.9	562	0	0	
American Airlines, Inc., Total	4,750,342	149,514	81,175,007	999.0	353,348	234,813	95,572,225	84.94
Dallas-Los Angeles.	1,530,243	29,524	26,018,194	119.0	75,748	44,113	30,532,113	85.22
Boston-Cleveland; New York-Chicago.	787,772	36,480	14,262,786	305.0	100,400	44,432	17,273,499	82.57
Boston-New York.	304,900	35,482	5,885,184	123.0	14,628	3,640	7,087,079	83.04
Cleveland-Nashville.	92,618	6,838	1,706,144	30.0	5,687	2,200	1,911,562	89.25
New York-Ft. Worth or Oklahoma City.	1,301,457	37,951	21,304,880	245.0	105,910	83,799	24,702,565	86.25
Washington-Chicago.	159,992	7,225	2,460,611	34.0	11,855	3,485	3,100,998	79.35
Chicago-Ft. Worth.	331,380	11,303	5,609,387	61.0	16,741	12,706	6,524,199	85.98
Buffalo-Toronto.	12,282	2,462	169,878	4.0	280	0	255,714	66.43
El Paso or Ft. Worth-Mexico City.	229,698	4,048	3,757,943	78.0	22,099	40,438	4,184,496	89.81
Brantiff Airways, Inc., Total	865,736	36,676	15,103,420	157.4	46,912	16,493	17,048,516	88.59
Chicago-Dallas.	420,235	14,347	7,402,818	66.7	23,158	13,845	8,139,733	90.95
Denver-Brownsville; Amarillo-Memphis.	410,111	20,308	7,041,310	73.0	20,024	2,587	8,169,810	86.19
Houston-Nuevo Laredo or Corpus Christi.	35,384	5,500	659,292	17.7	1,730	61	738,973	89.22
Chicago & Southern Air Lines, Inc., Total	640,859	25,665	10,753,829	84.2	30,610	0	13,373,837	80.41
Chicago-New Orleans.	372,722	16,466	6,356,954	51.2	19,902	0	7,824,347	81.25
Detroit-Houston.	268,137	12,270	4,396,875	33.0	10,708	0	5,549,490	79.23
Continental Air Lines, Inc., Total	427,978	15,208	5,335,077	18.3	6,009	1,318	8,834,773	60.39
Denver-El Paso-San Antonio.	285,619	10,358	3,415,768	13.7	4,178	979	5,915,823	57.74
Pueblo-Tulsa.	40,443	2,245	562,592	1.3	250	191	843,819	66.67
Denver-Kansas City.	101,916	3,386	1,556,717	3.3	1,581	148	2,075,131	75.02
Delta Air Corporation, Total	772,795	34,952	14,940,263	65.0	31,969	0	17,727,717	84.28
Charleston or Savannah-Ft. Worth.	305,985	27,135	8,904,287	40.0	17,618	0	10,875,809	81.87
Chicago-Miami.	266,810	13,884	6,035,976	25.0	14,351	0	6,851,908	88.09
Eastern Air Lines, Inc., Total								
Boston-San Antonio or Brownsville.								
Boston or Detroit-Miami.								
Chicago-Jacksonville.								
Atlanta-Miami; Tallahassee-Memphis.								
Washington-St. Louis.								
Essair, Inc., Houston-Amarillo. Total	77,902	1,478	433,580	1.4	342	0	701,118	61.84
Inland Air Lines, Inc., Total	169,772	5,888	1,595,842	4.3	880	0	2,677,303	59.61
Denver-Great Falls.	109,981	5,113	1,268,963	3.6	722	0	2,111,731	60.09
Cheyenne-Huron.	59,791	1,401	326,879	.7	158	0	565,572	57.80
Mid-Continent Airlines, Inc., Total	372,575	17,626	5,553,093	34.4	13,416	0	7,009,853	79.22
Minneapolis-New Orleans.	296,225	12,485	3,986,841	20.4	7,811	0	4,993,101	80.30
Minneapolis-St. Louis-Kansas City.	76,350	5,672	1,566,252	14.0	5,607	0	2,044,752	76.60
National Airlines, Inc., Total	669,471	18,863	11,214,502	30.2	15,923	0	12,177,119	92.09
New York-Key West via Miami.	535,774	16,136	9,587,096	24.0	10,361	0	10,361,459	92.53
Jacksonville-New Orleans.	133,697	3,865	1,627,406	6.2	2,350	0	1,815,660	89.63
Northeast Airlines, Inc., New York-Caribou-Montreal; Burlington-Montreal; Bangor-Moncton. Total	274,188	25,331	5,142,514	22.3	4,047	0	6,493,920	79.19
Northwest Airlines, Inc., Total	1,315,837	38,520	22,669,110	112.3	66,427	0	25,921,471	87.45
Chicago-Seattle; Fargo-Winnipeg.	943,538	33,694	16,318,346	81.5	46,177	0	18,688,590	87.32
Minneapolis-Duluth.	13,248	1,262	180,580	.3	49	0	272,160	66.35
Minneapolis-New York.	359,051	9,066	6,170,184	30.5	20,201	0	6,960,721	88.64
Pennsylvania-Central Airlines Corporation, Total	1,344,919	89,967	25,835,520	302.0	71,551	0	33,859,725	76.30
Norfolk-Detroit.	639,055	30,656	12,982,467	143.0	29,636	0	17,495,267	74.21
Detroit-Milwaukee or Chicago.	330,429	30,230	6,253,254	85.0	19,317	0	8,044,670	77.73
Washington-Buffalo.	52,093	3,190	806,020	8.0	1,510	0	1,082,315	74.47
Pittsburgh-Buffalo.	27,707	2,197	415,206	6.0	903	0	579,214	71.68
Norfolk-Knoxville.	54,173	3,071	763,015	4.0	789	0	1,124,257	67.87
New York-Birmingham.	241,432	12,110	4,613,558	56.0	19,396	0	5,534,002	83.37
Transcontinental & Western Air, Inc., Total	3,510,980	72,599	65,593,730	713.0	323,074	108,072	75,919,663	86.40
New York-Los Angeles.	2,233,415	52,452	42,306,383	373.0	211,317	68,189	47,191,124	89.65
Dayton-Chicago.	41,262	2,891	676,552	9.0	2,060	438	828,747	81.64
Winslow-San Francisco.	259,987	10,078	3,559,811	37.0	12,557	3,398	4,875,676	73.01
New York-Chicago-Kansas City.	676,043	21,954	14,413,555	240.0	84,950	31,807	17,086,253	84.36
St. Louis-Detroit via Cincinnati & Dayton.	159,591	8,553	2,350,721	40.0	7,746	2,402	3,015,490	77.95
Washington-Dayton via Columbus.	86,361	4,456	1,479,805	7.0	2,339	277	1,794,890	82.45
Pittsburgh-Boston.	54,321	2,169	806,903	7.0	2,105	1,561	1,127,483	71.57
United Air Lines, Inc., Total	4,134,667	114,131	69,272,606	580.0	324,598	282,704	80,345,808	86.22
New York-Oakland.	2,774,097	58,575	45,034,928	340.0	254,777	213,172	52,406,806	85.93
Salt Lake City-Seattle.	276,819	10,100	4,846,401	32.0	25,864	18,487	5,774,222	83.93
Seattle-San Diego.	904,901	44,910	16,503,914	182.0	36,128	44,523	18,644,120	88.52
Seattle-Cheyenne.	11,616	733	70,080	2.0	307	197	238,368	29.40
Seattle-Vancouver.	23,034	3,878	391,042	6.0	1,002	0	456,428	85.67
Washington-Toledo.	80,208	3,521	1,386,329	6.0	2,262	139	1,636,508	84.71
Cleveland-Boston.	63,992	2,255	1,039,912	12.0	4,528	6,186	1,189,356	87.43
Western Air Lines, Inc., Total	644,118	31,794	11,151,425	77.0	23,490	2,465	14,341,136	77.76
San Diego-Salt Lake City.	305,390	15,195	5,082,963	40.1	15,264	0	6,445,233	78.86
Salt Lake City-Great Falls.	68,897	2,947	913,229	10.3	2,118	0	1,428,750	63.92
Great Falls-Lethbridge.	9,636	717	103,686	.7	80	0	190,532	54.42
Los Angeles-San Francisco.	260,195	14,067	5,051,547	25.9	6,028	2,465	6,276,621	80.48
Total.								
Caribbean Atlantic Airlines, Inc., San Juan-Mayaguez & Christiansted. Total	25,516	3,164	189,005	5.1	302	93	358,324	52.75
Colonial Airlines, Inc., New York-Montreal. Total	203,291	8,970	2,612,355	10.5	2,980	0	4,257,228	61.36
Hawaiian Airlines, Ltd., Honolulu-Hilo & Port Allen. Total	118,176	16,247	2,301,624	196.0	8,373	21,433	2,514,528	91.53
Grand Total.								

* The total passengers carried for each airline is an unduplicated figure.

Domestic Air Carrier Statistics—Concluded

Operations for the First Three Months of 1946 as Compared with the Same Period of 1945

Operator	Revenue miles flown January-March		Revenue passengers carried (unduplicated) January-March		Revenue passenger miles flown January-March		Express and freight carried (tons) January-March	
	1946	1945	1946	1945	1946	1945	1946	1945
All American Aviation, Inc.	387,555	312,134	0	0	0	0	9.3	15.5
American Airlines, Inc.	13,354,077	9,657,113	402,966	250,091	231,101,708	150,564,576	2,498.0	3,787.9
Braniff Airways, Inc.	2,452,389	1,668,231	102,603	65,986	42,199,978	27,847,988	349.9	271.6
Chicago & Southern Air Lines, Inc.	1,688,602	968,950	67,581	31,787	27,821,601	14,171,088	226.0	223.1
Continental Air Lines, Inc.	1,084,392	696,122	38,386	20,314	14,573,702	7,606,464	39.4	59.5
Delta Air Corporation	2,047,917	1,171,811	89,708	51,224	36,877,388	20,085,210	190.0	162.4
Eastern Air Lines, Inc.	—	5,474,573	—	172,175	—	90,106,456	—	1,091.7
Esair, Inc.	197,747	—	3,360	—	976,072	—	2.2	—
Inland Air Lines, Inc.	473,652	370,100	16,292	13,030	4,539,923	3,889,165	12.1	11.3
Mid-Continent Airlines, Inc.	1,052,087	619,988	48,547	22,731	15,035,691	5,880,536	76.3	50.5
National Airlines, Inc.	1,718,730	1,160,178	44,635	32,423	24,511,512	13,934,937	77.6	62.4
Northeast Airlines, Inc.	708,956	304,775	62,418	16,888	12,881,688	3,502,032	49.7	24.9
Northwest Airlines, Inc.	3,752,102	1,936,122	101,168	56,087	62,916,550	34,889,016	319.2	374.8
Pennsylvania-Central Airlines Corporation	—	—	226,191	132,562	64,631,740	27,958,265	746.0	1,018.5
Transcontinental & Western Air, Inc.	10,751,604	6,027,406	237,934	97,808	171,192,426	87,149,943	1,514.4	2,322.5
United Air Lines, Inc.	11,375,291	7,999,502	279,466	128,219	174,871,302	109,559,601	1,381.4	1,506.1
Western Air Lines, Inc.	1,816,359	1,077,409	86,697	42,287	31,460,391	17,959,208	202.0	155.4
Total	—	41,632,513	—	1,133,612	—	615,104,604	—	11,138.1
Index (1945=100)	—	100.00	—	100.00	—	100.00	—	100.00
Caribbean Atlantic Airlines, Inc.	85,034	50,028	11,317	4,546	676,501	325,179	22.3	36.4
Colonial Airlines, Inc.	518,276	312,874	26,761	14,235	8,071,237	4,372,816	27.0	25.8
Hawaiian Airlines, Ltd.	361,359	248,432	49,536	30,523	7,115,711	4,360,472	552.8	812.6
Grand Total	—	42,243,847	—	1,182,916	—	624,163,071	—	12,012.9
Index (1945=100)	—	100.00	—	100.00	—	100.00	—	100.00

Operator	Ton miles flown				Passenger seat-miles flown January-March		Revenue passenger load factor (percent) January-March	
	Express January-March		Freight January-March		1946	1945	1946	1945
	1946	1945	1946	1945*				
All American Aviation, Inc.	1,191	2,647	0	—	0	0	—	—
American Airlines, Inc.	820,207	1,708,656	567,965	—	263,496,734	172,391,276	87.71	87.34
Braniff Airways, Inc.	117,119	130,351	25,649	—	49,010,496	32,979,384	86.10	84.44
Chicago & Southern Air Lines, Inc.	82,642	89,778	0	—	35,217,921	20,032,856	81.78	70.74
Continental Air Lines, Inc.	13,440	26,770	2,328	—	22,389,829	10,168,636	65.09	74.80
Delta Air Corporation	91,800	62,057	0	—	44,633,973	24,170,551	82.62	83.10
Eastern Air Lines, Inc.	—	583,462	—	—	—	104,566,011	—	86.17
Esair, Inc.	—	—	785	—	1,779,723	—	54.84	—
Inland Air Lines, Inc.	2,653	2,683	0	—	7,592,618	6,070,802	59.79	64.06
Mid-Continent Airlines, Inc.	28,630	14,634	—	—	19,196,553	10,021,319	78.32	58.68
National Airlines, Inc.	33,839	26,762	0	—	27,035,682	15,270,854	90.66	91.25
Northeast Airlines, Inc.	8,905	4,868	0	—	16,730,403	6,705,216	77.00	52.23
Northwest Airlines, Inc.	191,756	198,914	0	—	73,626,147	42,238,889	85.45	82.60
Pennsylvania-Central Airlines Corporation	178,523	208,181	0	—	82,069,611	39,201,505	78.75	71.32
Transcontinental & Western Air, Inc.	999,365	1,177,318	231,934	—	199,124,711	100,882,542	85.97	86.39
United Air Lines, Inc.	1,000,889	1,142,571	406,566	—	203,450,856	116,436,938	85.95	94.09
Western Air Lines, Inc.	63,322	68,546	6,836	—	41,266,548	21,195,871	76.24	84.73
Total	—	5,448,198	—	—	—	722,332,650	—	85.16
Index (1945=100)	—	100.00	—	—	—	100.00	—	100.00
Caribbean Atlantic Airlines, Inc.	1,064	2,894	689	—	1,320,749	442,017	51.22	73.57
Colonial Airlines, Inc.	6,750	7,612	0	—	10,853,332	6,569,754	74.37	66.56
Hawaiian Airlines, Ltd.	22,325	126,294	62,636	—	7,680,936	4,606,560	92.64	94.66
Grand Total	—	5,584,998	—	—	—	733,950,981	—	85.04
Index (1945=100)	—	100.00	—	—	—	100.00	—	100.00

	January	February	March
Passengers carried (unduplicated) total revenue and non-revenue:			
17 domestic airlines	629,032	639,647	—
Total airlines	661,480	667,376	—
Passenger miles flown (total revenue and non-revenue):			
17 domestic airlines	331,055,567	332,315,068	—
Total airlines	336,897,337	337,356,042	—

* Express and freight ton-miles combined under express. Not reported separately prior to July 1945.

Note.—Effective January 1, 1946, all revenue traffic statistics are reported to the CAB on the basis of direct airport-to-airport distances. For purposes of comparability, those traffic statistics reported prior to that date on the basis of course-flown distances have been converted to reflect direct airport-to-airport distances.

Domestic Civil Airplane Production—1945

By Power and Weight

TOTAL	2,047	By gross weight:	1,860
By number of engines:		1,300 pounds or less	86
Single-engine	1,946	1,300-4,000 pounds	91
Multi-engine	101	4,000-10,000 pounds	10
By horsepower:		10,000-25,000 pounds	10
50 H.P. and under	0	25,000 pounds or more	10
51-70 H.P.	1,759		
71-100 H.P.	168		
101-165 H.P.	19		
166-225 H.P.	28		
226-300 H.P.	0		
301-600 H.P.	63		
601-1,800 H.P.	0		
Unclassified	10		

Note: For Domestic Civil Airplane Production by Types, 1945, see Civil Aeronautics Journal, April 15, 1946.

For comparable figures for previous years, see CAA Statistical Handbook of Civil Aviation. On sale for 25 cents a copy at the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

40 Approved A&E Schools

Forty aircraft and engine mechanic schools hold CAA air agency certificates at present. These schools have met CAA standards for curriculum, equipment and teaching, and offer assurance to graduates that they will be eligible to take the CAA examinations for A&E certificates. Thirteen of the schools are in the first region (headquarters, New York). Others are located throughout the U. S. in the remaining six regions. A list of these schools may be obtained from the CAA Aviation Information Office, Department of Commerce, Washington 25, D. C.

Rental Plan Will Make Planes More Useful, Says Geisse

Plans are now being laid for rental services which will take the airplane out of the category of a sport and give to it a degree of utility which it has generally lacked in the past, John Geisse told the American Society of Mechanical Engineers at Chattanooga, Tenn.

One-way Trip—Mr. Geisse, who is Assistant to the Administrator of Civil Aeronautics for Personal Flying Development, said that he was referring to the "so-called 'Fly It Yourself' services in which you will be able to rent an airplane in one city and turn it in at another without the need for returning it to its starting point or paying for that return.

"With the degree of airplane utilization which might well be attained with such a service it should be possible to rent a two-place airplane capable of cruising at 100 miles an hour, at not more than 10 cents a mile, and perhaps less. The cost for two people would therefore approximate the cost of equivalent transportation by air or Pullman, thus in effect bringing the premium cost of personal flying to approximately zero. In addition, such a service will be a partial answer to the problem of weather since in the event of a change in weather the renter can turn the airplane in at the nearest station and continue on his journey by other means of transportation.

Help in Getting Job—"When such services have been established throughout the country, I expect that employers will give serious consideration to the ability of applicants for employment to make use of these services if the positions they seek involve much travel in short jumps for the airplane but long jumps for the automobile.

"Club ownerships," Mr. Geisse continued, "were quite common in the prewar period and there appears to be a very widespread interest in them now. Properly run, they do provide a very satisfactory flying service for their members at a very reasonable cost. Not infrequently they are formed of members who have some other interest in common, such as employment by the same company. In some cases they have their own clubhouses and operate a fleet of airplanes.

"Personal airplane ownership, however, will undoubtedly account for the greatest number of personal airplanes although it will not account for the greatest number of pilots. Surveys have indicated that we can expect to have from 300,000 to 500,000 personal type airplanes in operation within the next ten years. Although this may sound fantastic to you, it is far from it. We may have more. Even 500,000 airplanes costing \$1000 per year to operate would account for an expenditure of only \$500,000,000 per year.

Large Potential Market—"If expenditures on personal transportation only hold their own in the advance in our consumer expenditures, the increase will have to be over \$3 billion. The rate of increase in the number of personal planes required to meet the predicted figure is less than that attained by the automobile in its earlier days and the airplane manufacturers now have on their books orders for over twice as many personal type airplanes as are now in use.

"Granting that there is a very large potential market for personal flying and that our economy can be such that it can afford personal flying if it so wishes, there may still exist in your mind a question as to whether it will find flying worth its cost. I think the answer to this is 'yes' despite the fact that many found it not worth its cost in the prewar period."

Wallace and Wright Meet Six Inter-American Trainees in Observance of Pan-American Week

Aviation trainees from the other Americas met with Secretary of Commerce Henry A. Wallace and T. P. Wright, Administrator of Civil Aeronautics, in Washington as part of the observance of Pan-American Week, April 16.

Six trainees, four of them now receiving on-the-job training with airlines in this country, and two who expect to return soon to their native countries, Chile and Panama, were in the group. All are students in the training being given under CAA direction in the fourth Inter-American training program.

Luis A. Filos Otoy, Panama City, Panama, who has specialized in airport management at Washington National Airport as an intern trainee, has received training in airline work from Eastern and Pennsylvania Central and expects to apply his training to some phase of the operation of a large international airport now being built at Panama City. All of his training expenses have been paid by the Republic of Panama.

John W. Mococain Clark, Concepcion, Chile, an aviation intern trainee, has been receiving on-the-job training in all phases of airline operation with

Pennsylvania Central Airlines at Washington. He plans to complete his senior year in aeronautical engineering at Catholic University before returning to work for a Chilean national airline.

Jorge Ernesto Barnaby Alfaro, Lima, Peru, a mechanic graduate of the Spartan School of Aeronautics, Tulsa, Okla., is now receiving six months on-the-job training in airline maintenance at American Overseas Airlines in New York.

Carlos Flor Medina, Cochabamba, Bolivia, a mechanic graduate of the Spartan School now receiving on-the-job training at American Overseas, expects to return to work for the Lloyd Aero Boliviano, the airline he worked for 10 years prior to his coming here.

Carlos Amado, Niteroi, Brazil, graduate of the Spartan School, now receiving six months on-the-job training in light airplane production with Engineering & Research Corp., Riverdale, Md., will return home about Oct. 1 to work in Brazilian aviation enterprises.

Ruben Montanes Palomar, Mexico City, graduate of the Spartan School and now with American Overseas, will also return home about Oct. 1.



Left to right: Luis A. Filos Otoy, Panama City, Panama; John W. Mococain Clark, Concepcion, Chile; Jorge Ernesto Barnaby Alfaro, Lima, Peru; M. Justin Herman, former Assistant Administrator for Aviation Training; Carlos Flor Medina, Cochabamba, Bolivia; Administrator Wright; Carlos Amado, Niteroi, Brazil; Ruben Montanes Palomar, Mexico City.

July 1 Is the Deadline for Aircraft Inspection

Warning that July 1, is the deadline for the annual inspection of aircraft has been given by T. P. Wright, Administrator of Civil Aeronautics.

Planes which have not been inspected within the 12 months preceding the deadline date will be considered unairworthy and grounded. Aircraft flown after that date without an inspection will subject the owners or operators to penalties under Section 43.22 of the Civil Air Regulations. This section originally was to become effective July 1, 1945, but owners were given a year's grace because of wartime difficulties.

The inspection, Mr. Wright pointed out, must be made by a CAA Inspector or a CAA Designated Aircraft Maintenance Inspector and only after the aircraft has been given the required periodic 100-hour inspection by a certified A & E mechanic.

The need for immediate action by all concerned was stressed by the Administrator in view of the

fact that inspectors already are burdened by a tremendous workload. Should a last-minute rush for inspection develop, it would be impossible for the inspectors to complete the job before the deadline. Owners and operators, therefore, would suffer the inconvenience and expense of having planes grounded until inspection could be made.

The Administrator suggested that persons owning or operating aircraft on which the Airworthiness Certificate Form 308 was not issued, or on which the certificate has not been endorsed on the reverse side since July 1, 1945, give immediate attention to the completeness and accuracy of the aircraft file, the airworthiness of the aircraft and the time and place where it is desired that the inspection take place.

Any information regarding the inspection can be obtained from the local CAA Inspector or a Designated Inspector.

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